# Muelleria

Plant, Algal and Fungal Taxonomy and Systematics

REFERENCE

Vol 32, 2014

Royal Botanic Gardens Melbourne

***Myoporum bateae* F.Muell. Source: Mueller, F. (1886). *Description and illustrations of the myoporinous plants of Australia. II. Lithograms.* John Ferres, Government Printer: Melbourne, pl. LIX. Illustration: Robert Graff**

*Myoporum bateae* was named for Mary Bate, who collected the type specimens. Mary collected over 350 specimens in total – including fungi, algae and mosses – around Mount Dromedary and Tilba Tilba in New South Wales. She was one of at least 225 women throughout Australia who collected botanical specimens for Ferdinand von Mueller.

REF. COPY 1

*Muelleria* publishes research papers on Southern Hemisphere plant, algal and fungal taxonomy and systematics, particularly relating to Australia. Acceptable submissions include: taxonomic revisions; phylogenetic and biogeographical studies; short papers describing new taxa, documenting nationally significant new records, or resolving nomenclatural matters; historical analyses relevant to systematics; and any research contributing to our knowledge of plant, algal or fungal diversity. Special issues or reviews will be considered after discussion with the Editor.


| | | | |
|---|---|---|---|
| Editor in Chief | Tom May | | |
| Associate Editors | Daniel Murphy | Frank Udovicic | Neville Walsh |
| Production Editor | Alison Vaughan | | |
| Associate Production Editor | Wayne Gebert | | |
| Subscription Manager | Sally Stewart | | |



| | |
|---|---|
| Editorial enquiries | The Editor, *Muelleria*<br>muelleria@rbg.vic.gov.au |
| Subscriptions and exchange | The Librarian<br>library@rbg.vic.gov.au<br><br>Royal Botanic Gardens Melbourne<br>Private Bag 2000<br>Birdwood Avenue<br>South Yarra, VIC, 3141<br>Australia |
| Instructions to authors | Please consult the instructions to authors at the website below. A concise version is printed inside the back cover of each issue.<br>www.rbg.vic.gov.au/science/publications/muelleria |
| Publication frequency | One issue per year |
| Subscription rates | The following rates include postage and GST. All payments must be in $AUD. Cheques should be made payable to the Royal Botanic Gardens Melbourne. Contact the Subscription Manager for additional payment options. |

| | Australia | International |
|---|---|---|
| Individuals | $40 | $62 |
| Organisations | $50 | $77 |

| | |
|---|---|
| Layout | SUBStitution Pty Ltd |
| Printer | BigPrint |
| Printed on recycled paper | |


© Royal Botanic Gardens Melbourne 2014

ISSN 0077-1813

***Muelleria* volume 31 was distributed on 8 April 2013**

# Muelleria

# Contents

Volume 32, 2014

Royal Botanic Gardens Melbourne
14 MAY 2014
LIBRARY

Royal Botanic Gardens Melbourne

## Contributed papers

Page

A new herbaceous species of *Pluchea* (Asteraceae: Plucheinae) from central Australia ..... 3
– D.E. Albrecht and A.R. Bean

Studies of the distribution and taxonomy of *Xanthorrhoea glauca* subsp. *angustifolia* (Xanthorrhoeaceae) in Victoria ..... 8
– M.P. Bellette

A revision of the *Coronidium scorpioides* (Asteraceae: Gnaphalieae) complex ..... 16
– N. Walsh

Notes on *Olearia* (Asteraceae: Astereae) in south-east Australia: *O. tenuifolia, O. adenophora* and description of a new species endemic to eastern Victoria ..... 34
– N. Walsh

The weed that was not: *Picris hieracioides* (Asteraceae) in Australia ..... 39
– L. Gillbank

*Rubus costifolius* and *R. bergii* in the National Herbarium of Victoria ..... 52
– A. van de Beek

Hidden treasures: Brazilian plants collected by Prince Maximilian zu Wied held in the National Herbarium of Victoria (MEL) ..... 58
– C.L. Gallagher and P.L.R. de Moraes

'A taste for botanic science': Ferdinand Mueller's female collectors and the history of Australian botany ..... 72
– S. Maroske

Ferdinand Mueller's female plant collectors: a biographical register ..... 92
– S. Maroske and A. Vaughan

## Book review

Review of *Collecting ladies: Ferdinand von Mueller and women botanical artists* ..... 173
– J.R. Thurlow

Royal
Botanic
Gardens
Melbourne

# A new herbaceous species of *Pluchea* (Asteraceae: Plucheinae) from central Australia

D.E. Albrecht [1] and A.R. Bean [2]

[1] c/o Northern Territory Herbarium, Department of Land Resource Management, PO Box 1120, Alice Springs 0871, Northern Territory, Australia; e-mail: davealbrecht4@gmail.com

[2] Queensland Herbarium, Department of Science, Information Technology, Innovation and the Arts, Brisbane Botanic Gardens, Mt Coot-tha Road, Toowong 4066, Queensland, Australia; e-mail: tony.bean@qld.gov.au (corresponding author)

## Introduction

Hunger (1996, 1997) published on the taxonomy of the genus *Pluchea* Cass. in Australia. She described a new species, *Pluchea dunlopii* Hunger, and reinstated *P. ferdinandi-muelleri* Domin, and, in the latter paper, a revision for the continent, enumerated seven species.

A renewed examination of the genus in Australia has been prompted by the imminent publication of the relevant volume of the *Flora of Australia*, resulting in the recognition of further species. Five have so far been published (Bean 2011; Bean 2013). This paper formally describes a further species that was recognised by the first author as being distinct from *P. dentex* R.Br. ex Benth. nearly 20 years ago.

## Materials and methods

This paper is based on a study of herbarium specimens at DNA, NT, AD, MEL and NSW (including an isotype of *Pluchea dentex*) and examination of *Pluchea* populations in the field. Measurements of capitula and florets were made from fresh material, spirit material or rehydrated herbarium specimens, while leaves, bracts and achenes were measured from dried specimens. Capitulum length was measured from the base of the involucre to the apex of the anthers of the disc florets. Capitulum width was measured at the widest point of the involucre. Peduncle length was measured from the base of a mature capitulum (that had shed achenes) down to the next branch. Data relating to achenes are based on those that have developed from the outer filiform florets.

## Abstract

*Pluchea macdannellensis* Albr. & A.R. Bean is described and illustrated, with notes on distribution, habitat and relationships with other species of *Pluchea*.

***Key words:*** *Pluchea macdonnellensis, Pluchea dentex,* Australian flora, Northern Territory flora, South Australian flora

*Muelleria* 32:3–7 (2014)

## Taxonomy

***Pluchea macdonnellensis*** Albr. & A.R. Bean **sp. nov.**

*Pluchea* sp. Ormiston (H.D.V. Prendegast 66) *sensu* Albrecht, D.E., Duguid, A.W., Coulson, H., Harris, M.G. & Latz, P.K. (2007)

***Type:*** **NORTHERN TERRITORY.** Ormiston Pound, 5 km due W of Mt Giles, 6.vi.2010, *D.E. Albrecht 13465* (holo: DNA, iso: BRI, CANB, MEL, AD).

Perennial *herb or subshrub* up to 35 cm high, aromatic. *Stems* green, terete, erect to spreading, moderately densely covered with shortly stipitate glands mostly ≤ 0.1 mm long, and sometimes with eglandular hairs to 0.5 mm long in leaf axils. *Leaves* sessile, linear to narrowly oblanceolate or narrowly elliptic, not decurrent, (4–)10–40(–55) mm long, 0.4–3(–4) mm wide, those towards the base of stems tending to be larger, margins entire or rarely with a few small teeth on one or both margins in the distal half, sparsely to moderately densely covered with shortly stipitate or sessile glands mostly ≤ 0.1 mm long or rarely to 0.3 mm long, sometimes with stouter outgrowths to 0.5 mm with or without a terminal gland on the leaf undersurface, base attenuate, apex subacute to acute, sometimes weakly apiculate, margins plain or recurved, midvein commonly slightly raised on abaxial side. *Capitula* arranged cymosely, sometimes with two new capitula-bearing branches arising from below an older capitulum, campanulate, heterogamous, 6–8 mm long, 4–5(–6) mm wide; peduncles 30–100 mm long, hollow below capitulum; peduncular bracts reducing in size towards capitulum, linear to narrowly oblanceolate, entire, densely covered with shortly stipitate or sessile glands. *Involucral bracts* in several rows; *outer bracts* 3–4 mm long, 0.5–0.7 mm wide, herbaceous with scarious margins, moderately densely covered with shortly stipitate or sessile glands, narrowly elliptic to linear-lanceolate or linear-oblanceolate, apex acute to acuminate, distal margins slightly fimbriate and sometimes with stipitate glands; *inner bracts* 4.5–6 mm long, 0.15–0.5(–0.6) mm wide, scarious except for narrow midvein, glabrous, linear-lanceolate, apex acute, margins entire or slightly fimbriate distally. *Receptacle* epaleate, slightly convex to flat, verrucose, 3–4.5 mm diameter. *Outer florets* c. 200, filiform, female, arching outward distally; corolla 3.8–4.5 mm long, pale pink; lobes 3–4, triangular, 0.2–0.3 mm long, often with sessile glands on exterior; style distinctly bifid, exserted, glabrous; pappus 3–3.8 mm long, pappus bristles 8–11, of somewhat unequal length, very indistinctly barbellate. *Disc florets* (30–)35–100, tubular, appearing bisexual but functionally male; corolla 4–5 mm long, deep pink; lobes 5, triangular, 0.5–0.7 mm long, with sessile glands on exterior; anthers c. 2 mm long, including basal appendages 0.1–0.2 mm long, apical appendages obtuse, filament collar cells swollen; style shortly bifid with appressed lobes, exserted by 0.7–2 mm, with subacute sweeping hairs; pappus 3.5–4 mm long, pappus bristles 7–12(–14), of somewhat unequal length, indistinctly barbellate. *Achenes* cylindrical to narrowly ellipsoid or narrowly obovoid, 0.65–1 mm long, with scattered appressed twin hairs, carpopodium small and ring-shaped. Fig. 1

***Selected specimens examined:*** **NORTHERN TERRITORY.** Hugh River, c. 2 km downstream of Hugh Gorge, 19.iv.1994, *D.E. Albrecht 5856* (NT, DNA); 2 km S of Cumming Yards, West MacDonnell Ranges, 26.viii.2003, *D.E. Albrecht 10560* (NT); Mt Larrie Range, 15 km W of Papunya, 29.ix.2004, *D.E. Albrecht 11586 and P.K. Lotz* (NT); c. 13 km E of Mt Giles, West MacDonnells NP, 16.v.2006, *D.E. Albrecht 11986* (NT); Ormiston Pound, in dry creek running adjacent to walking track near central boulder mound, 7.x.1997, *D. Bishop 126* (NSW); Track between Mt Leibig Outstation and Talipata Gorge, 8.vii.1988, *M.G. Corrick 10344* (MEL, NT); Central Australia (no precise locality), *no date*, Horn Expedition (NSW); Ormiston Pound walking trail on Ormiston Creek, 15.iii.1997, *P. Horsfall 280 and N. Brolsmo* (NT); Ormiston Gorge Reserve, 11.xi.1976, *P.K. Lotz s.n.* (NT); Simpsons Gap National Park, south of Rocky Gap, 5.xi.1980, *P.K. Lotz 8521* (NT); Talipata Springs, 11.x.2003, *P.K. Lotz 19504* (NT); 55 km W of Haast Bluff Settlement, 12.viii.2006, *P.K. Lotz 22044* (NT, DNA); 4 km NW of Jay Creek, 38 km WSW of Alice Springs, 17.ii.2010, *P.K. Lotz 25100* (AD, DNA, MEL, NT); Ormiston Pound, 25.viii1989, *H.D.V. Prendegost 66* (NT); Todd River Recreation Lake area, 1.ii.1980, *A.S. Weston 5* (NT, PERTH); Roadside near Stanley Chasm, 15.v.1975, *L.D. Williams 6597* (AD). **SOUTH AUSTRALIA.** North West, Tomkinson Range, iv.2001, *R. Botes 58744* (AD).

***Distribution and habitat:*** With the exception of one record, all collections have been made within or on the edge of the MacDonnell Ranges bioregion of arid Northern Territory (Fig. 2). A single collection was made in the Tomkinson Range (far north-western South Australia) in 2001 following exceptional rains; however, there is a remote possibility that the locality is incorrect. The occurrence of *Pluchea macdonnellensis*

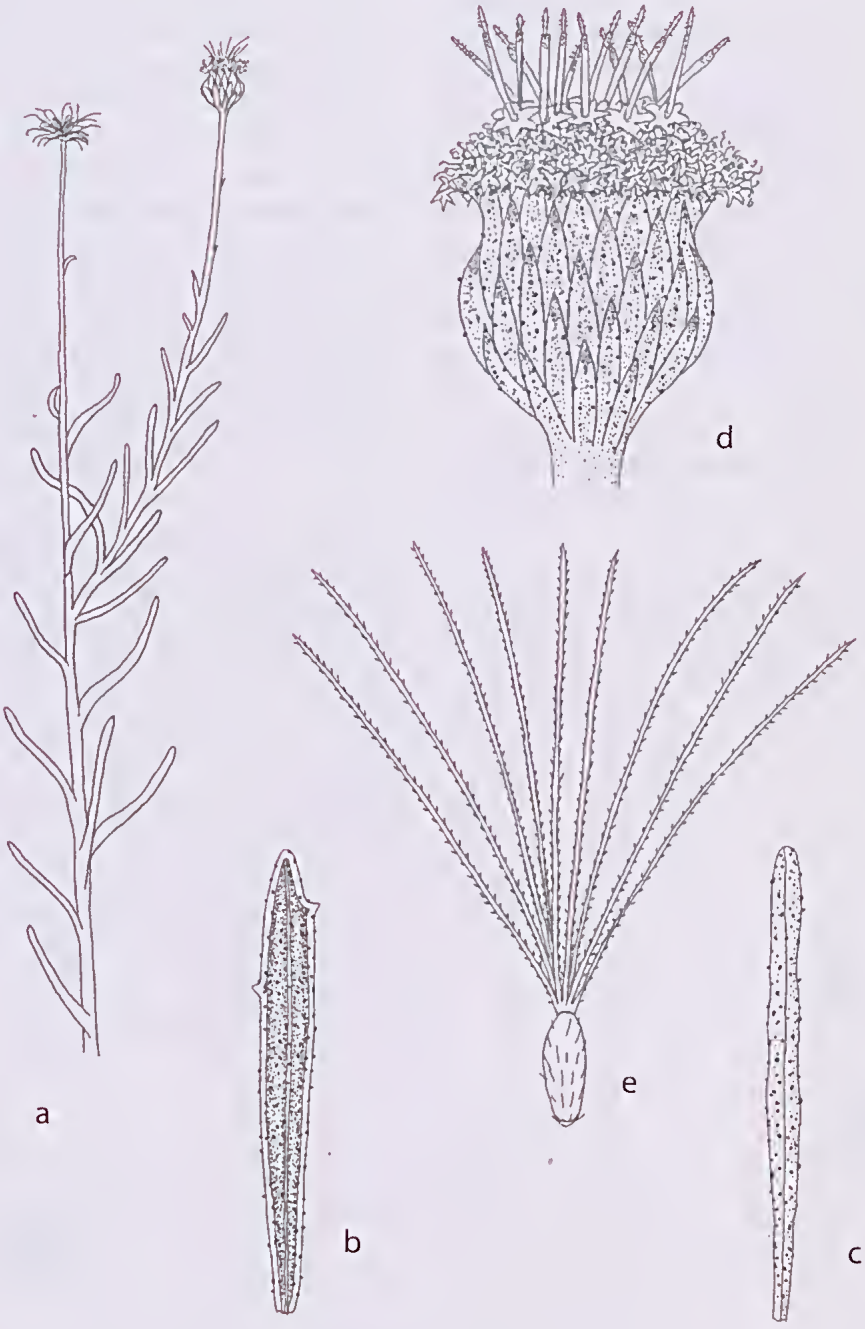



**Figure 1.** *Pluchea macdonnellensis*: **a.** middle to upper portion of flowering plant, ×1; **b.** lower leaf showing rare marginal teeth, ×3; **c.** typical leaf, ×3; **d.** flowering capitulum, note that number of emergent styles visible is not indicative of the number of disc florets, ×5; **e.** achene of filiform female floret, ×17. A–E drawn from cultivated material originating from *Horsfall 280*.

in north-western South Australia is intriguing given that the species has not been found in adjacent areas of far south-western Northern Territory despite extensive searches.

The taxon is restricted to gravelly or rocky (rarely sandy) creek beds and small drainage lines, and the gravelly or rocky slopes of foothills. Most populations occur on gneiss, schist or granite geology, rarely extending onto nearby quartzite. Commonly associated species include *Eucalyptus camaldulensis* subsp. *arida* Brooker & M.W.McDonald, *Melaleuca glomerata* F.Mueller, *Gossypium sturtianum* J.H.Willis, *Themeda triandra* Forssk. and *Triodia brizoides* N.T.Burb. *Pluchea macdonnellensis* commonly occurs with *P. rubelliflora* (F.Muell.) B.L.Rob. and occasionally with *P. ferdinandi-muelleri* or *P. dunlopii*.

***Phenology:*** Flowering specimens have been collected most months of the year and, like many other herbaceous arid zone species, flowering is linked to rainfall events.

***Notes:*** *Pluchea macdonnellensis* is closely allied to the variable *Pluchea dentex*. The two taxa are readily separated on leaf morphology. In *P. dentex* the leaf margins are regularly toothed or pinnatifid on most or all leaves of a plant, whilst in *P. macdonnellensis* all leaves are entire or a few lower leaves may have few marginal teeth. Additional overlapping characters may be useful in distinguishing the two taxa including the number of disc florets within each head ((30–)35–100 in *P. macdonnellensis*, cf. 9–40 in *P. dentex*), the length of the shortest peduncle (30–100 mm long in *P. macdonnellensis*, cf. 3–34 mm long in *P. dentex*) and the presence of non-glandular hairs on the corolla lobes of disc florets (present or absent in *P. dentex*, cf. absent in *P. macdonnellensis*). The leaves of *Pluchea macdonnellensis* and *P. dentex* have somewhat different odours but as yet no phytochemical analyses have been carried out.

*Pluchea dentex* is a widely distributed taxon in arid Northern Territory occurring along sandy, gravelly or rocky drainage lines across a range of geologies. *Pluchea macdonnellensis* on the other hand occurs on a narrower range of geologies and appears equally adapted to gravelly or rocky slopes of foothills as it does to drainage lines. Although *Pluchea macdonnellensis* and *P. dentex* occur within the same region they have not been seen growing together.

Specimens of this taxon do not appear to have been seen by Hunger (1997) when she was revising the

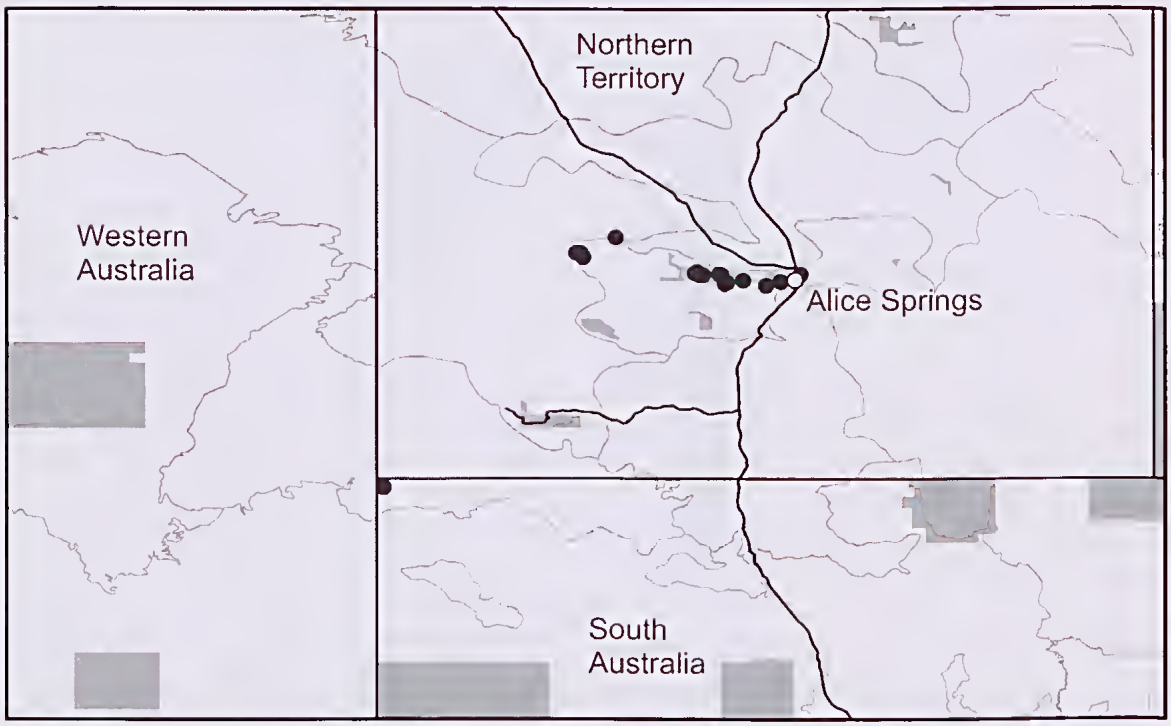



**Figure 2.** Distribution of *Pluchea macdonnellensis* (closed circle). Bioregional boundaries shown by finer grey linework.

Australian members of *Pluchea*. Using her treatment, *Pluchea macdonnellensis* will key to *P. dentex*.

***Conservation status:*** This taxon is currently listed as DD (data deficient) under the 2010 review of schedule 2 of the *Territory Parks and Wildlife Conservation Act 2000*. Further survey work in north-western South Australia would help to resolve the uncertainty concerning the occurrence and conservation status of the species in South Australia.

***Etymology:*** The specific epithet refers to the geographic distribution of the species, which is virtually confined to the MacDonnell Ranges bioregion.

## Acknowledgements

The authors thank Sally Mumford for preparing the illustration and Bob Bates for providing information about his collection of *Pluchea macdonnellensis*.

## References

Albrecht, D.E., Duguid, A.W., Coulson, H., Harris, M.G. and Latz, P.K. (2007). *Vascular plant checklist for the sauthern bioregians af the Northern Territory: namenclature, distributian and canservation stotus*, 2nd edn. Northern Territary Gavernment, Department of Natural Resaurces, Environment and the Arts: Alice Springs.

Bean, A.R. (2011). Two new species of *Pluchea* Cass. (Asteraceae: Plucheinae) from Queensland, Australia. *Austrobaileya* **8**, 340–346.

Bean, A.R. (2013). Three new species af *Pluchea* Cass. (Asteraceae: Inuleae–Plucheinae) fram narthern Australia. *Austrabaileya* **9**, 66–74.

Hunger, S. (1996). The *Pluchea tetronthera* camplex (Campasitae: Plucheeae) fram Australia. *Willdenawio* **26**, 273–282.

Hunger, S. (1997). A survey af the genus *Pluchea* (Campasitae: Plucheeae) in Australia. *Willdenowia* **27**, 207–223.

# Studies of the distribution and taxonomy of *Xanthorrhoea glauca* subsp. *angustifolia* (Xanthorrhoeaceae) in Victoria

Marc P. Bellette

Ecology Consultants Pty Ltd, PO Box 6039, Preston West, Victoria 3072, Australia;
e-mail: marc@ecologyconsultants.com.au

## Abstract

The Victorian distribution and taxonomy of *Xonthorrhoeo glouco* subsp. *ongustifolio* D.J.Bedford is confirmed and described. Current morphological ranges for taxonomic characters do not provide adequately for Victorian populations. A revised key for *Xonthorrhoea* in Victoria is provided to resolve this matter. In Victoria the taxon occurs in woodland and forest on impoverished, often auriferous, soils on inland hills and foothills of the Great Dividing Range. The morphologically similar *X. oustrolis* R.Br. has a non-overlapping distribution mainly in current and former coastal landscapes. The importance of marine transgression of western Victoria in contributing to speciation in *Xanthorrhoeo* is discussed.

***Key words:*** Box-Ironbark, Grey Grass-tree, Rushworth

*Muelleria* 32:8–15 (2014)

## Introduction

*Xanthorrhoea* Sm. is an iconic monocotyledonous genus containing 29 taxa (Bedford 1988). *Xanthorrhoea* is endemic to continental Australia and associated offshore islands. There are six taxa currently recorded for Victoria. Four taxa were accepted as occurring in Victoria by Conn (1994) (*Xanthorrhoea australis* R.Br., *X. minor* subsp. *lutea* D.J.Bedford, *X. resinosa* Pers. (as *X. resinifera* (Sol. ex C.Kite) E.C.Nelson & D.J.Bedford), and *X. semiplana* F.Muell. subsp. *semiplana*). *Xanthorrhoea caespitosa* D.J.Bedford has since been recorded for western Victoria although confirmation is still required. The recognition and distribution of the sixth taxon, *X. glauca* subsp. *angustifolia* D.J.Bedford, Grey Grass-tree, is discussed here.

The concepts of *X. glauca* and of *X. australis* have varied since their first discovery. Robert Brown described *X. australis* based on a specimen collected in 1804 from Grass Tree Hill, near Risdon Cove north of Hobart, Tasmania. This name has subsequently been widely used for populations throughout eastern Australia. Prior to publication of the *Flora of Australia* volume 46 in 1986 there was a very broad concept of *X. australis,* including now discrete taxa in Queensland, New South Wales, Victoria, South Australia and Tasmania. The inadequacy of a broadly circumscribed *X. australis* had been recognised for decades. Alma Lee (1966a, 1966b), formerly of the New South Wales Herbarium, proposed a new subspecies of *X. australis.* Jacobs and Pickard (1981) described western and eastern forms of *X. australis* subsp. *australis* separated by the spine of the Great Dividing Range.

*Xanthorrhoea glauca* was described in the *Flora of Australia* by David Bedford (1986) as part of the first systematic review of the genus (and in his doctoral thesis (Bedford 1988)). In that treatment he recognised two subspecies. *Xanthorrhoea glauca* subsp. *glauca* is a taxon of the northern coastal hinterland of New South Wales. *Xanthorrhoea australis* subsp.

*australis* (western form) was circumscribed by Bedford (1986) as *X. glauca* subsp. *angustifolia*. Taxonomic features that separate the two subspecies of *X. glauca* are leaf shape, leaf width and leaf colour. As only *X. glauca* subsp. *angustifolia* occurs in Victoria, further references to *X. glauca* herein relate only to this subspecies. In Victoria, the character states that distinguish *X. australis* and *X. glauca* are of importance (Table 1). It is difficult to determine *Xanthorrhoea* species on single characters (Bedford 1988) and there can be wide variation in the dimensions of many taxonomic characters within a single individual and considerable variation within populations. The acute shape of at least some (the most mature) *X. glauca* packing bracts of the inflorescence is the most useful taxonomic character in contrast with *X. australis*. In addition, the inflorescence scape length, and the lower ratio of the inflorescence scape to spike length for *X. glauca* are usually sufficient for identification, provided measurements of several inflorescences can be taken.

Bedford (1986) described the distribution of *X. glauca* as 'mainly along the ranges from the slopes of the Snowy Mountains to Inverell' and 'growing on rocky and gravely slopes'. He did not consider *X. glauca* present in Victoria, but described *X. australis* as growing inland 'south of Wangaratta', and in the Grampian Ranges and Little Desert. The close proximity of Wangaratta (putative *X. australis*) to the inland slopes of the Snowy Mountains (*X. glauca*) presented a distributional anomaly that was not addressed by Bedford or in the later published *Flora of Victoria* (Conn 1994). At the time of Bedford's thesis completion in 1988, the southernmost herbarium specimen for *X. glauca* was Mount McDonald in the Australian Capital Territory (*Burbidge 6713* (CANB, NSW)). A lack of herbarium specimens south of Canberra gave the false impression that there was a distributional disjunction to inland Victorian *Xanthorrhoea* localities. As was the case in southern New South Wales, Victoria's recorded localities were at that time very few and specimens largely absent from herbaria.

New South Wales agencies have since contributed data entries for *X. glauca* that currently include locations west of the Snowy Mountains such as The Rock (30 km south-west of Wagga Wagga) and an isolated occurrence in the Big Bush (13 km north-west of Temora in central New South Wales). A distributional extension of *X. glauca* into Victoria seemed likely, with one *X. glauca* locality near Walwa in New South Wales only 13 km from the nearest Victorian record of *X. australis*. In 2002, material, including slices of flowering inflorescences, were sent from Chiltern National Park (north-east Victoria) (MEL 2154357, MEL 2154356) to the National Herbarium of Victoria. This material was then sent to Karen Wilson of the Royal Botanic Gardens, Sydney, and confirmed as *X. glauca*. The taxon was added to the census of the Victorian vascular flora (Walsh & Stajsic 2007).

Victoria's eastern populations are contiguous with the New South Wales distribution along the southern slopes of the Great Dividing Range. Chiltern is in the north-east of Victoria near the New South Wales border, and populations of *Xanthorrhoea* occur further into Victoria as close as the Warby Ranges and Killawarra State Forest (~45 km south-west of Chiltern), at Glenrowan (~51 km south-west of Chiltern), and at Upotipotpon (west of Benalla). The low lying, wide and north-trending Goulburn River valley separates the Warby Ranges and Chiltern from populations to the west in north-central Victoria. *Xanthorrhoea glauca* occurs in the hills surrounding Seymour, Nagambie, Rushworth, Redesdale and Heathcote in central Victoria (~100 km

**Table 1.** Summary of the main differences between *Xanthorrhoea glauca* subsp. *angustifolia* and *X. australis* (Bedford 1986)

| Character | *X. glauca* subsp. *angustifolia* | *X. australis* |
|---|---|---|
| Leaf width mm | 1.3–2.8 | 1.2–3 |
| Leaf thickness mm | 0.9–1.6 | 1–2.2 |
| Scape diameter mm | 18–40 | 18–40 |
| Scape length cm | 50–100 | 30–50 |
| Spike diameter mm | 40–50 | 50–80 |
| Spike length cm | 100–160 (<250) | 110–180 (<250) |
| Scape/spike ratio | 1 to 1.5–4 (rarely equal) | 1 to 2–6 |
| Packing bracts | Acute | Elongated, subulate, glabrous |
| Leaf colour | Greyish | Blue-grey, glaucous |

to the south-west of the Warby Ranges). The Goulburn Valley separates many closely related taxa in the Box-Ironbark ecosystem, most notably the dominant tree species Mugga Ironbark (*Eucalyptus sideroxylon* A.Cunn. ex Woolls) and its disjunct relative Red Ironbark (*Eucalyptus tricarpa* (L.A.S.Johnson) L.A.S.Johnson & K.D.Hill). There are also subtle floristic community differences (Muir et al. 1995). In 2003, specimens were collected in the Rushworth–Heathcote forest for both the National Herbarium of Victoria (MEL 2212500, MEL 2212501) and the National Herbarium of New South Wales (NSW 591768). These specimens were confirmed as *X. glauca* subsp. *angustifolia*.

The current paper aims to provide some clarity regarding taxonomic identification and distribution of *X. glauca* across Victoria. Herbarium specimen localities and locality records held by the Victorian, New South Wales and South Australian governments are analysed and mapped. In addition, an extensive field survey for new populations is reported for Central Victoria. Measurements are made of inflorescences and leaves, offering a revised taxonomic key for Victoria. The paper also discusses biogeographical interpretation of distribution and the taxon's conservation status.

## Methods

***Site visits and taxonomic data collection and analysis:*** During 2003 and 2004 many *Xanthorrhoea* populations across central Victoria and southern New South Wales were located on field trips (Table 2). In central Victoria, data were collected for a numerical taxonomic study at five sites. The width ($n$=499) and thickness ($n$=499) of leaves were recorded. The diameter of the scape ($n$=30) and spike ($n$=27), the length of scape ($n$=48), and the overall length of the inflorescence (spike plus scape) and scape to spike ratio ($n$=47) were also recorded. Descriptive statistics were calculated and the range reported in text as two standard deviations from the mean.

***Reference locations from authoritative sources:*** Site locality records were obtained from the Victorian *Flora Information System* (Viridans Pty Ltd), records held by New South Wales Parks and Wildlife Queanbeyan, and the South Australian Department of Environment and Heritage. These data were carefully checked for misidentifications and erroneous entry of geographical coordinates. Locality data were also available for herbarium specimens. Victorian material of *Xanthorrhoea australis* collected by Bedford (1986) was included in the assessment (NSW 382659).

Finally, a literature review was undertaken and a few key references used as reliable sources of information. A chemical analysis of *Xanthorrhoea* resin from Mangalore, Victoria, was undertaken by Duewell (1997) in an attempt to understand taxonomic differences in resin composition. Duewell concluded that Mangalore shared an identical chemistry with populations from the Cotter Dam–Uriarra Crossing in the ACT and

**Table 2.** Victorian *Xanthorrhoea glauca* localities visited

| Site name | Locality | UTM (84) |
|---|---|---|
| Carapooee | Forest, 8.8 km (17°) from Stuart Mill | 54 H 706228 5931645 |
| St Arnaud | Forest, 1.5 km (247°) from St Arnaud | 54 H 700374 5944835 |
| Whroo | Forest, 43 km (237°) from Shepparton | 55 H 321172 5948177 |
| Beehive | Forest, 3.5 km (103°) from Chiltern | 55 H 467684 5998037 |
| Coyles | Forest, 6.2 km (111°) from Chiltern | 55 H 470069 5996614 |
| Glenrowan | Roadside reserve, 3 km (28°) from Glenrowan | 55 H 431234 5966959 |
| Mount Pilot | Forest, Mount Pilot, 12.6 km (158°) from Chiltern | 55 H 469210 5987159 |
| Mangalore | Private Land, 7.8 km (42°) from Seymour | 55 H 340000 5906000 |
| Crosbie | Forest, 12 km (91°) from Axedale | 55 H 288934 5926200 |
| Fontainbleu | Forest, 12.5 km (200°) from Rushworth | 55 H 318300 5937200 |
| Melville's Lookout | Forest, 28.8 km (57°) from Heathcote | 55 H 319200 5926900 |
| Beechworth | Rail reserve, 11.5 km (242°) from Beechworth | 55 H 461421 5969746 |
| Ararat | Forest, 5 km (300°) from Ararat | 54 H 666881 5874306 |
| Lurg | 4.3 km south-east of Lurg Fire Tower | 55 H 428542 5952715[1] |
| Mia Mia | Private Property, south of Heathcote | 55 H 229578 6011888 |

1 Locality is approximate

from Goulburn, New SouthWales. Although Duewell recognised the chemical identity, he acknowledged the help of David Bedford in assigning the name used in his paper (Duewell 1997) *X. glauca* subsp. *angustifolia*. This is considered reliable evidence to extend the known distribution of *X. glauca* far south-west to Mangalore near Seymour in Victoria.

***Construction of a distribution map:*** Point locations of all samples are layered over a base map of Australia and a distributional grid is constructed for each 10-minute grid cell for both *X. australis* and *X. glauca* in Victoria and adjoining regions using the software ArcGIS. The line of the Great Dividing Range and major cities is included in this map.

## Results

### Distribution

The distribution of *Xanthorrhoea glauca* in New South Wales is contiguous with that of north-eastern and central Victoria (Fig. 1). The distribution follows the inland slopes of the Great Dividing Range (and isolated occurrences further inland) both in New South Wales

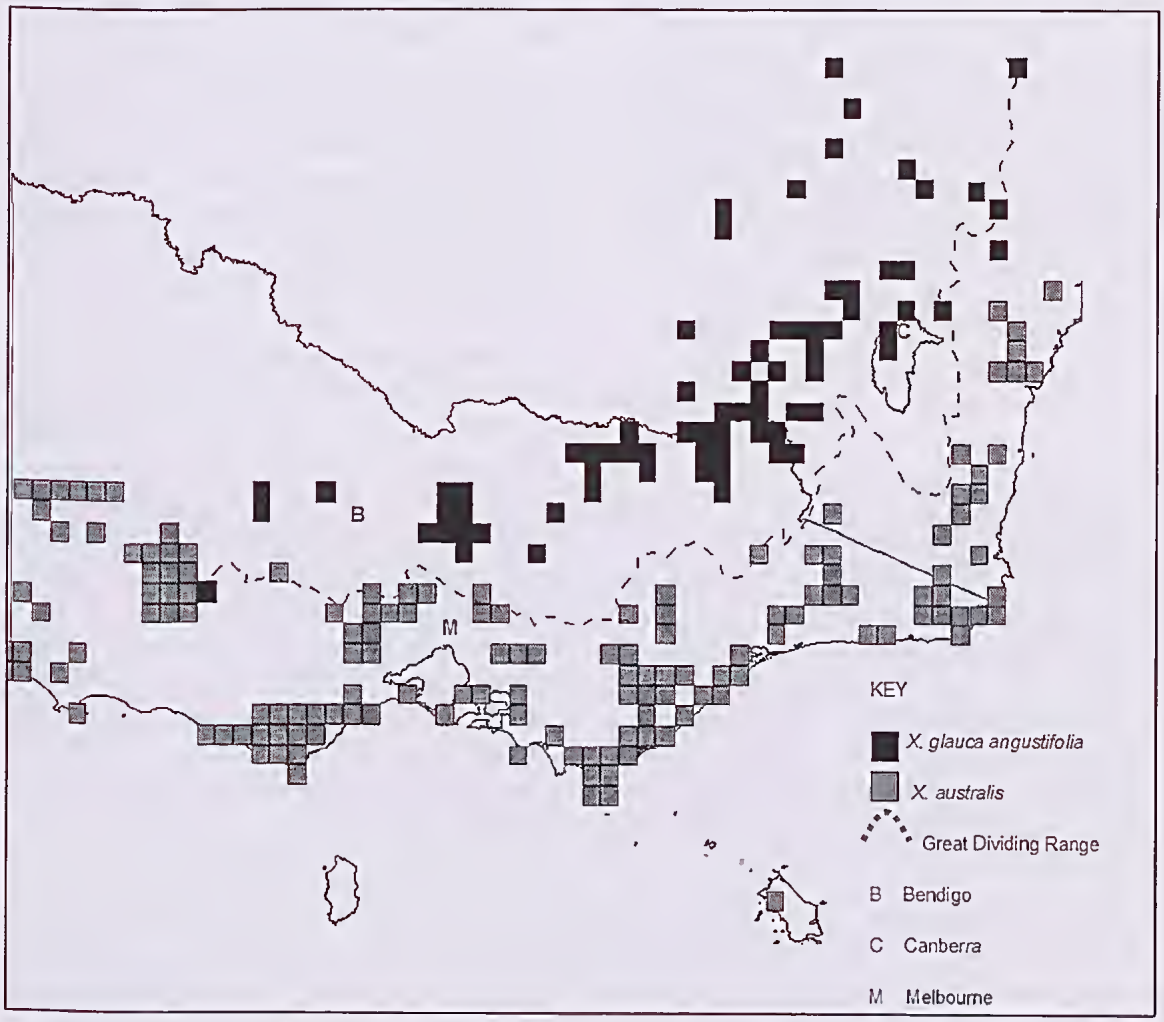



**Figure 1.** Distributional map of *Xanthorrhoea glauca* subsp. *angustifolia* and *X. australis* in Victoria and adjoining regions. The proposed distribution of both species is shown for Victoria and adjoining regions (South Australian border region, Bass Strait Islands, New South Wales and the Australian Capital Territory). Black represents known locality records for *X. glauca* subsp. *angustifolia*, and the grey shading, *X. australis*. Each rectangle represents at least one site locality recorded within 10 minutes of latitude and longitude (~19 km × 15 km). The position of the Great Dividing Range and three cities is shown (M = Melbourne, B = Bendigo, C = Canberra). Localities of discussion are the Grampians (1), the Otway Ranges (2), St Arnaud (3), RHFB (4) and Chiltern (5).

and Victoria. By comparison, *X. australis* is predominantly a species of coastal plains and hinterlands, except in far western Victoria where the species extends as far inland as the Little Desert. The Great Dividing Range (Fig. 1, dashed line) is an effective demarcation between the two species in most of Victoria and New South Wales. *Xanthorrhoea glauca* has been reliably identified as far north as Glenbar Ridge, a sandplain 69 km from Charleville, Queensland (BRI AQ0331097), although the distributional knowledge is not as reliable as in Victoria, especially north of Canberra. In Victoria, many of the *X. glauca* 10-minute grid squares are represented by small populations and in some cases just a few individuals remain. Larger populations in the Rushworth–Heathcote area and east of Wangaratta represent core populations in public forests, but the apparent connectivity of the grid squares (Fig. 1) consists of small isolated populations on private land. A few individuals were found south-west of St Arnaud, near Arnold/Kingower (and possibly at Ararat) in Box-Ironbark vegetation.

## Taxonomy of Central Victorian populations

The Rushworth–Heathcote population is morphologically close to, but not entirely consistent with, Bedford's (1986, 1988) concept of *X. glauca*. Comparisons between field measurements and Bedford's ranges are given in Table 3.

***Inflorescence dimensions***: Typical ratios (0.82–)1–*1.7*–2.58(–3.1) (*n*=47) are below the absolute range 1.5–4 for *X. glauca* given by Bedford (1988). Scape length is (63–)65.6–*103*–140.4(–146) cm (*n*=48) and exceeds the upper absolute limit of 100 cm for *X. glauca* but is further in excess of *X. australis* (~50 cm). Scape diameter (mm) is a reliable and consistent measure, with dimensions (19.8–)24.1–*34.9*–45.7(–49.6) mm (*n*=30) better aligned to the upper limit of the range of *X. glauca* (46 mm) compared with the smaller *X. australis* (40 mm).

***Packing bracts:*** All mature packing bracts are distinctly acute to triangular although many non-mature linear bracts are also usually present. Frequently bracts are abruptly tapered above the base of the bract and increase in width towards the apex so that they are spathulate. These shapes are not evident in *X. australis* and are the most reliable character for recognition of *X. glauca*.

***Leaves:*** Fresh leaves are usually transverse-rhombic, quadrate-rhombic or broadly transverse-rhombic when mature. They are glaucous to grey although they may occasionally be green. There is a tendency for *X. glauca* to have greyer leaves than *X. australis* but this is not a reliable character on its own. Leaf dimensions of the Rushworth–Heathcote population for thickness are (0.85–)0.95–*1.47*–1.99(–2.40) mm (*n*=499). These measurements encompass the *X. australis* concept but the lower dimensions are more consistent with the thinner-leaved *X. glauca* (hence, the Latin epithet *angustifolia*). Leaf width (mm) (1.50–)1.71–*2.37*–3.03(–3.40) is not a reliable diagnostic in distinguishing either taxon.

***Flowering phenology:*** *Xanthorrhoea glauca* flowers gregariously in mast events either triggered by fire or other environmental factors. Typically, under non-fire-stimulated flowering, apical crowns of many (but not a majority of) plants produce a single inflorescence. Following fire, multiple inflorescences can be initiated per crown. Most populations of *X. australis* notably do not flower unless exposed to fire when they flower *en masse* (Gill 1993). In the drought conditions of (roughly) 2000–2011 limited flowering of *X. australis* occurred near Mt Zero in the drier northern area of the Grampians (Gariwerd) National Park. Over the same period populations of *X. glauca* flowered in mast events every two to three years.

**Table 3.** Comparison of morphological characters of Central Victorian populations of *Xonthorrhoeo glouco* from this study compared to Bedford's (1986) measurements

| Character | Min. | Max. | Av. | S.D. | Bedford (1986) |
|---|---|---|---|---|---|
| Leaf thickness mm | 0.85 | 2.4 | 1.47 | 0.26 | 0.9–1.6 |
| Leaf width mm | 1.5 | 3.4 | 2.37 | 0.33 | 1.3–2.8 |
| Scape length cm | 63 | 146 | 103 | 18.7 | 50–100 |
| Scape diameter mm | 19.8 | 49.6 | 34.9 | 5.4 | 18–46 |
| Spike width mm | 33.3 | 79.4 | 60 | 9.5 | 35–77 |
| Inflorescence length cm | 65 | 242 | 170 | 36.4 | 150–250 |
| Scape/spike ratio | 0.82 | 3.1 | 1.7 | 0.44 | 1.5–4 |

## Discussion

### Taxonomy of Victorian Populations

The differences in scape length and scape:spike ratio would be consistent with a third subspecies given the very minor morphological differences between the two subspecies currently recognised within the *Xanthorrhoea glauca* concept (Bedford 1988). However, the published morphological ranges are based on small sample sizes and it is believed preferable to extend the currently recognised morphological dimensions of *X. glauca* to accommodate Victorian populations within subsp. *angustifolia* in that species. An alternative to the current taxonomic key for Victoria (Conn 1994) is provided for this purpose. Adapted from Conn (1994), it includes *X. caespitosa* and permits a wider morphometric range of character states for *X. glauca*. In the key, secondary consideration is given in to inclusion of light brown packing bracts, the more acutely shaped packing bracts and strong glaucous coloration of the leaves. Likewise, morphometric ranges are extended for *X. australis* (data in Bellette 2009).

Records of *X. australis* from far east Gippsland in coastal sand plains correlate well with the environmental conditions and newer locality records of *X. resinosa*. It is possible that records of *X. australis* in the mountainous terrain of east Gippsland and in the upper Snowy River valley in particular may be referable to *X. glauca*. This author concurs with Walsh and Entwisle (1994) that some records of *X. australis* in the far west of the state are likely to be referable to *X. caespitosa* or *X. semiplana* subsp. *semiplana*. Further research is required.

### Distributional patterns of Grass Trees in Victoria

***Biogeography:*** *Xanthorrhoea glauca* occurs on a wide range of geologies across its southern range. At Bungonia Gorge near Goulburn, *X. glauca* grows on limestone cliffs, whereas near Yass, Tumut, Tumblong, Coolac and Gundagai it grows on slates and sandstones as well as serpentine geologies (Lyons et al. 1974). In the Australian Capital Territory, at Birragai Rock Shelter and Tidbinbilla it is found in association with granite outcrops. *Xanthorrhoea glauca* occurs in the Eastern and Western Uplands of Victoria (Department of Primary Industries 2013), and is highly correlated with auriferous country, often in association with granite batholiths and associated contact and regional metamorphism,

**Key to *Xanthorrhoea* in Victoria**[1]

1 Flower-bearing axis (spike) of the inflorescence shorter than or equal to the non-flowering axis (scape); sepals and bracts between flowers usually hairy; stem subterranean or up to 0.6 m high ..... 2

1: Flower-bearing axis (spike) of the inflorescence longer than the non-flowering axis (scape); sepals and bracts between flowers subglabrous to glabrous; trunk usually well-developed, up to 5 m high, or sometimes absent ..... 4

2 Cluster bracts not prominent except at the base of the spike ..... ***X. resinosa***

2: Cluster bracts prominent for at least part of the inflorescence ..... 3

3 Leaves usually about 3.2–7 mm wide, grey, glaucous; scape 90–120 cm long. Packing-bracts fringed with hairs to moderately hirsute ..... ***X. caespitosa***

3: Leaves 1.9-3.5 mm wide, green, not glaucous; scape 30–60 cm long ..... ***X. minor* subsp. *lutea***

4 Packing bracts subulate ..... 5

4: Packing bracts tending narrowly triangular to triangular, acute, usually subglabrous, dark or light brown in colour; leaves blue-green to greyish, often glaucous ..... 7

5 Leaves 5–12 mm wide, bluish, very glaucous; scape 80–120 cm long ..... ***X. glauca* subsp. *angustifolia***

5: Leaves 1.2–3.1 mm wide, often green, or occasionally bluish or glaucous; scape usually less than 60 cm long ..... ***X. australis***

1. At the time of publication there exists uncertainty as to the taxonomic and distributional status of both *X. caespitosa* and *X. semiplana* subsp. *semiplana* in western Victoria and the population would benefit from molecular taxonomic study. In the absence of this information both species are identified here using Bedford's original diagnostic characters.

and on limited Tertiary alluvial deposits. The majority of locality records occur on Palaeozoic sandstones and in some instances on granites. *Xonthorrhoeo glouca* is well represented on Silurian sandstones east of the Mt William Fault (running roughly north-south between Melbourne and Echuca) but is sparse on Ordovician sandstone west of the Mt William Fault (in the area known as the Bendigo Structural Zone) (Edwards et al. 1998). The high quartz composition and infertile soils derived from granites and Silurian sandstone is a likely explanation for this distribution. *Xanthorrhoeo glouco* does not extend west of the Moyston Fault, an important geological feature in Australia forming the terrane boundary between the Delamerian and Lachlan fold belts (Birch 2003).

Bellette (2009) has shown that the distribution of *X. glouco* inland is limited to areas with annual rainfall in excess of 450–500 mm. Locality records west of Bendigo are few and many appear to be associated with Tertiary alluvial (non-marine) deposits. Since the Oligocene, the sea has at times encroached into the Murray Basin causing possible disjunctions in plant populations and subsequent speciation. In Victoria, the maximum extent of inundation brought the coastline into what is Central Victoria today, most of the Otway Basin and coastal areas of the Gippsland Basin (Cochrane et al. 1995). The distribution of *X. australis* is associated with areas either inundated by sea or fringing its perimeter (including Tasmania), including the Otway Ranges, the Grampians, the Brisbane Ranges, and parts of Gippsland (Wallace et al. 2005). West of the eastern fringe of the Murray Basin, *Xonthorrhoeo semiplono* grows on the relict sandplain of this shallow sea bed in South Australia and probably Victoria.

**Figure 2.** *Xanthorrhoeo glouco* subsp. *angustifolia* on private land adjoining the Heathcote–Greytown National Park

***Flora:*** Allied *Eucalyptus* species are always present with *X. glauco* although the trees can show severe drought stress and poor health as a result of the impoverished soils. There is a strong association with *E. macrorhyncho* F.Muell. ex Benth., and in the mountainous inland slopes with *E. dives* Schauer. Throughout the entire distribution in Victoria and New South Wales *Gonocorpus tetrogynus* Labill., *Brochyloma daphnoides* (Sm.) Benth. and *Lomondro filiformis* (Thunb.) Britten are typical species of the lower strata (Bellette 2009). By comparison, *X. australis* associates with a wide range of lowland eucalypts (e.g. *E. baxteri* (Benth.) Maiden & Blakely ex J.M.Black, *E. rodioto* Sieber ex DC., *E. sieberi* L.A.S.Johnson and *E. viminolis* subsp. *pryoriona* (L.A.S.Johnson) Brooker & Slee, whereas the association of *X. semiplono* and/or *X. coespitoso* is primarily with *Eucolyptus arenaceo* J.C.Marginson & Ladiges and a few mallee species. Marine transgression has been proposed to account for the speciation and current distribution of *E. boxteri* and *E. orenocea* (Marginson & Ladiges1988). There is at least one exception adding complexity to a consistent pattern of *Xonthorrhoeo/Eucolyptus* species association as *E. mocrorhyncha* and *X. oustrolis* co-occur in areas surrounding Melbourne. Despite this anomaly, the relevant *Xanthorrhoea* of the Melbourne region and the Otways is *X. oustralis*. Ian Staff (1976) provided photographic evidence of a flowering *Xonthorrhoeo* suggesting that populations in the Kinglake area are *X. oustrolis*. Likewise, the scape:spike ratio of inflorescences in a photo taken at Anglesea after the 1983 bushfire (Gill 1993) are consistent with the that of *X. australis*. *Xonthorrhoeo australis* often grows in heathland lacking a consistent *Eucolyptus* canopy.

## Conservation

Although *X. glouca* has a wide distribution across northern and north-eastern Victoria, many isolated populations are very small and have shown inadequate recruitment for long-term persistence. Isolated populations on private farmland suggest that the

species was once more common and widely distributed. Land clearing and forest disturbance have considerably reduced the extent of *X. glauca* in Victoria. Vast areas of native forest have been cleared and would likely have supported *Eucalyptus macrorhyncha* and possibly *X. glauca* in many districts including suitable geologies around Chiltern, Lurg, Rushworth, Seymour, Redesdale, St Arnaud and Ararat. Lawrence and Bellette (2009) detailed historical practices of forest management, including gold mining and gravel extraction in the Box-Ironbark Forest. These practices would have directly reduced Grass-tree populations within the forest estate. *Xanthorrhoea* species are very susceptible to the introduced soil pathogen *Phytophthora cinnamomi* Rands and adults are prone to high mortality rates following burning (Curtis 2003). There is also an undocumented extent of illegal harvesting for nursery sale, and leaf harvesting for floristry. The species has recently been listed as Threatened under the Victorian *Flora and Fauna Guarantee Act 1988*. The species confidently qualifies as critically endangered in Victoria within the IUCN Red List categories (IUCN 2001) as it satisfies the following criteria: CR A4abcde.

## Summary

*Xanthorrhoea glauca* subsp. *angustifolia*, Grey Grass-tree, occurs across northern Victoria from the north-east border with New South Wales as far south-west as Ararat. The taxon occupies a unique biophysical environment compared with the morphologically similar *X. australis*. The taxonomic key provided accommodates the distinctive morphology of Victorian populations, namely the larger inflorescences compared with published data for this taxon and for *X. australis*. Physical protection, particularly from fire, and applied research are required to protect this highly threatened taxon from ongoing threats and facilitate recovery.

## References

Bedford, D.J. (1986). 'Xonthorrhoeo', in A.S. George (ed.), *Floro of Austrolio, Iridoceoe to Dioscoreoceoe* **46**, 148–169. Australian Government Publishing Service: Canberra.

Bedford, D.J. (1988). *Towords o noturol clossificotion – toxonomy ond evolution of* Xanthorrhoea. PhD thesis, The University of Sydney, Sydney, New South Wales.

Bellette, M.P. (2009). The biogeography and ecology of *Xonthorrhoeo glouco* subsp. *ongustifolio* in south-eastern Australia. PhD thesis, The University of Melbourne, Melbourne, Victoria.

Birch, W.D. (2003). *Geology of Victorio*. Geological Society of Australia (Victoria Division): Melbourne.

Cochrane, G.W., Spencer-Jones, D. and Quick, G.W. (1995). *Introducing Victorion geology*. Geological Society of Australia (Victorian Division): Melbourne.

Conn, B.J. (1994). 'Xonthorrhoeo', in N.G. Walsh and T.J Entwisle (eds), *Floro of Victorio* **2**, 720–734. Inkata Press: Melbourne.

Curtis, P. (2003). *An ecologicol study of* Xanthorrhoea australis *R.Br.* PhD thesis, La Trobe University, Bundoora, Victoria.

Duewell, H. (1997). Chemotaxonomy of the genus *Xonthorrhoeo*. *Biochemicol Systemotics ond Ecology* **25(8)**, 717–738.

Department of Primary Industries (2013). *Victorion geomorphologicol fromework*. Accessed 30 Dec. 2013. <http://vro.dpi.vic.gov.au/dpi/vro/vrosite.nsf/pages/landform_geomorphological_framework>

Edwards, J., Wohlt, K.E, Slater, K.R, Olshina, A. and Hutchinson, D.F. (1998). Heathcote and parts of Woodend and Echuca 1:100 000 map area geological report. *Geologicol Survey of Victorio Report* **108**.

Gill, M. (1993). 'Interplay of Victoria's Flora with Fire', *in* D.B. Foreman and N.G. Walsh (eds), *Floro of Victorio* **1**, 212–226. Inkata Press: Melbourne.

IUCN (2001). *IUCN Red List Categories ond Criterio: Version 3.1*. IUCN Species Survival Commission. IUCN: Gland, Switzerland and Cambridge, UK.

Jacobs, S.W.L. and Pickard, J. (1981). *Plonts of New South Woles*. Government Printer: Sydney.

Lawrence, R.E. and Bellette, M.P. (2009). Gold, timber, war and parks: A history of the Rushworth Forest in Central Victoria. *Proceedings of the Royol Society of Victorio* **122(2)**, 130–146.

Lee, A.T. (1966a). Notes *on Xonthorrhoeo* in Eastern Australia. *Contributions from the New South Woles Notionol Herborium* **4**, 35–54.

Lee, A.T. (1966b). Xanthorrhoeaceae. *Contributions from the New South Woles Notionol Herborium* **34**, 1–16.

Lyons, M.T., Brooks, R.R. and Craig, D.C. (1974). The influence of soil composition on the vegetation of the Coolac serpentinite belt in New South Wales. *Proceedings of the Royol Society of New South Woles* **107**, 67–75.

Marginson, J.C. and Ladiges, P.Y. (1988). Geographical variation in *Eucolyptus boxteri* s.1. and the recognition of a new species, *E. orenoceo*. *Austrolion Systemotic Botony* **1**, 151–157.

Muir, A.M., Edwards, S.A. and Dickins, M.J. (1995). *Description ond conservotion stotus of the vegetotion of the Box-Ironbork Ecosystem in Victorio*. Department of Conservation and Natural Resources: Melbourne.

Staff, I.A. (1976). Rapid growth rates in inflorescences of *Xonthorrhoeo oustrolis* R.Br. *Proceedings of the Royol Society of Victorio* **88**, 109–114.

Wallace, M.W., Dickinson, J.A., Moore D.H. and Sandiford M. (2005). Late Neogene strandlines of southern Victoria: a unique record of eustasy and tectonics in southeast Australia. *Austrolion Journol of Eorth Sciences* **52(2)**, 279–297.

Walsh, N.G. and Entwisle, T.J. (1994). *Flora of Victorio* **2**. Inkata Press: Melbourne.

Walsh, N.G. and Stajsic, V. (2007). *A census of the vosculor plonts of Victorio* **8**. Royal Botanic Gardens Melbourne: South Yarra.

# A revision of the *Coronidium scorpioides* (Asteraceae: Gnaphalieae) complex

**Neville Walsh**

National Herbarium of Victoria, Royal Botanic Gardens Melbourne, Private Bag 2000, Birdwood Ave, South Yarra 3141, Victoria, Australia; e-mail: neville.walsh@rbg.vic.gov.au

## Abstract

*Coronidium scorpioides* (Labill.) Paul G.Wilson is revised and segregated into four relatively widespread species in south-eastern Australia (*C. scorpioides*, *C. gunnionum* (Hook.) N.G.Walsh, *C. monticolo* N.G.Walsh and *C. rutidolepis* (DC.) N.G.Walsh) and one possibly extinct species, *C. densifolium* J.M.Black ex N.G.Walsh, from near Encounter Bay, South Australia. A key to the species and images of representative specimens are provided, and their distribution and ecology are discussed. Lectotypes are chosen for *Helichrysum scorpioides* var. *pygmoeum* F.Muell. and *Helichrysum semipopposum* var. *gunnionum* DC., synonyms of *C. monticolo* and *C. scorpioides* respectively.

***Key words***: taxonomy, *Helichrysum*, revision, key to species

*Muellerio* 32:16–33 (2014)

## Introduction

In a paper erecting and monographing *Coronidium* Paul G.Wilson, the last of the Australian genera formerly included in *Helichrysum* Mill. to be segregated, Wilson (2008) commented under the account of *C. scorpioides* (Labill.) Paul G.Wilson that 'it seems probable that several taxa should be recognised' but considered that 'their discrimination would be best carried out by someone with field knowledge of the plants'. The following is an attempt to reconcile herbarium specimens with my own observations of the species complex from the field, original literature and types.

Jeanes' (1999) treatment of *Helichrysum* (now dispersed into other genera in Victoria) separated *H. scorpioides* Labill. and *H. rutidolepis* DC. and noted under the latter species the existence of at least two more-or-less distinct forms – a lowland form, 'closely resembling the type', which was described as having 'narrow-oblanceolate leaves, long bare peduncles, ...and smallish capitula' and plants with 'significantly larger capitula' that included a highland form with 'wider woollier leaves' that 'often lack the bare peduncles of the type'. Subsequently, Ross and Walsh (2003) and Walsh and Stajsic (2007), in successive censuses of Victorian vascular plants, prior to the recognition of *Coronidium*, accepted *H. scorpioides* and *H. rutidolepis* as well as two other informal entities, *H.* aff. *rutidolepis* (Alps) and *H.* aff. *rutidolepis* (Lowland Swamps). No published diagnoses were provided for these informally-named entities, but Victorian specimens at MEL had been segregated, at least approximately, into these entities. The present account is a consequence of a critical assessment of these entities and specimens represented in south-eastern Australian herbaria.

*Coronidium scorpioides*, in the broad sense, is distinguished from other members of the genus in having oblanceolate, rather than lanceolate, involucral bracts that are wrinkled or crumpled toward the apex. Wilson (2008) commented on differing subterranean parts as described by various authors, e.g. Haegi (1986) who regarded *H. scorpioides* as being taprooted and *H. rutidolepis* as being rhizomatous. Like Wilson, my observations suggest that all of the entities that comprise *C. scorpioides* sens. lat. are rhizomatous, although there are some differences in the nature of

branching and the true roots that emanate from the rhizomes. *Coronidium* sp. Many Peaks (I.R.Telford 12309) is treated as a synonym of *C. scorpioides* by CHAH (2011), but as indicated by Wilson (2008, p. 309), *Telford 12309* (CANB) represents *C. lanosum* Paul G.Wilson, or a close relative and is not part of the *C. scorpioides* complex.

After examining all material at AD, NSW, HO and MEL that had been determined as either *Helichrysum scorpioides* or *H. rutidolepis*, it became apparent that *H. rutidolepis* sens. str., with the type from the Port Jackson area, is endemic to central-eastern New South Wales, distinguished *inter alia* by the much-branched, spreading habit, consistently small capitula, narrow involucral bracts and subamplexicaul leaves – the latter noted as a diagnostic feature by de Candolle (1838). A combination for this distinct taxon is provided below (as *Coronidium rutidolepis*). Entities that had been associated with *C. rutidolepis* from other states or regions generally included plants with smaller capitula than those determined as *C. scorpioides,* but the foliage and habit generally appeared closer to *C. scorpioides* as represented by its type (from coastal south-eastern Tasmania). Segregation of *C. rutidolepis* from the complex still leaves the remainder of *C. scorpioides* sens. lat. as a diverse entity, but one that is, to a greater or lesser degree, morphologically and ecologically tractable. A very localised entity on the Fleurieu Peninsula, South Australia, has a number of unique features and is readily recognisable (admittedly from a very few herbarium sheets). It is perhaps now extinct due to land clearance and modification. Two other entities can be segregated from *C. scorpioides* sens. str. and, while a few puzzling specimens exist, they are generally readily distinguished morphologically and both have a strong ecological signal. The informally-named taxa listed by Ross and Walsh (2003) and Walsh and Stajsic (2007) are commonly accepted as distinct entities in botanical surveys, and, to some extent at least, have been separated in herbaria. They are here formally named as new species.

## Taxonomy

The following key and descriptions serve to distinguish members of the complex. In 'overlap zones' (typically montane, forested areas, or forested floodplains of major river systems) occasional specimens may possess features, to varying degrees, intermediate between *Coronidium scorpioides*, *C. gunnianum* (Hook.) N.G.Walsh and *C. monticola* N.G.Walsh. Whether these are true hybrids rather than intermediate forms of an incompletely speciated 'superspecies' can only be speculated upon. Herbarium specimens from AD, CANB, MEL and NSW regarded as intermediates have been indicated as such on determinavit slips, but generally assigned to the species of best fit.

Capitulum measurements are based on pressed herbarium specimens and these are probably slightly more expanded than fresh, unpressed specimens. The order of species reflects the inferred order of relatedness based on morphology.

### 1. *Coronidium rutidolepis* (DC.) N.G.Walsh **comb. nov.**

*Helichrysum rutidolepis* DC. *Prodr.* 6:194 (1838); N.C.W. Beadle et al., *Handb. Vasc. Pl. Sydney District* 386 (1962); N.C.W. Beadle et al., *Fl. Sydney Region* 475 (1963, 1972); A. Fairley & P. Moore, *Native Pl. Sydney District* 317 (1989); L. Robinson, *Field Guide Native Pl. Sydney Region* 139 (1991); R.C. Carolin & M.D. Tindale, *Fl. Sydney Region*, 4th edn, 554 (1994), 5th edn 470 (2009); J. Everett in G.J. Harden (ed.), *Fl. New South Wales* 3:232; pl. 13 (1992). *Gnaphalium rutidolepis* (DC.) Sch.Bip., *Bot. Zeitung* 3: 171 (1845).

***Type*: NEW SOUTH WALES.** 'Grassy spots on the banks of Creek, near Port Jackson', New South Wales, Apr. 1824, *A. Cunningham* (holotype G-DC (photo seen)).

*Illustration*: Fairley & Moore, *loc. cit.* 317 (1989); Robinson, *loc. cit.* 139 (1991); Everett, *loc. cit.* p. 232, pl. 13; all as *Helichrysum rutidolepis*.

Decumbent to ascending rhizomatous *perennial* to c. 50 cm high, freely branched. *Stems* cottony with scattered glands. *Leaves* narrow-elliptic to oblanceolate, 25–50(–70) mm long, 1.5–8(–15) mm wide, ±amplexicaul, sometimes auriculate, ±concolorous, papery; upper surface scabridulous with scattered glands, otherwise glabrous or sparsely (rarely to moderately) cottony; lower surface smooth, with abundant sessile glands; apex acute to acuminate, rarely obtuse, mostly tapering evenly to a fine weak mucro to 1.5 mm long; margins flat to revolute. *Peduncles* more or less erect, slender (mostly <0.8 mm diam.) with reduced leaves/bracts extending to within c. 1–4 cm of capitulum and not or rarely overlapping base of involucre. *Capitula* solitary,

**Key to species of the *Coronidium scorpioides* complex**

1 Capitula <18 mm diam., plant under 20 cm high, multistemmed, leafy throughout; stems generally concealed by dense foliage; capitula not conspicuously pedunculate, to some extent concealed by upper leaves. Known from only the Fleurieu Peninsula, SA and possibly extinct ..... ***S. C. densifolium***

1: Capitula >18 mm diam., or, if <18 mm diam., then stems not concealed by foliage and capitula distinctly pedunculate and not concealed by upper leaves ..... **2**

2 Leaves subamplexicaul, at least some usually slightly auriculate at base, thin-textured, usually distinctly scabridulous above; peduncles commonly ebracteate for (1–)2 cm or more below capitula. Capitula small, 10–15(–18) mm diam; bracts pale yellow or straw-coloured, not or barely exceeding florets, the broadest bracts to 1.5 mm wide. Coast and nearby tableland areas of central NSW; mostly moist forests ..... **1. *C. rutidolepis***

2: Leaves attenuate to base, neither amplexicaul nor auriculate; not markedly thin-textured; peduncles bracteate up to capitula, the uppermost bracts overlapping the base of the involucre; capitula (10–)15–35 mm diam. when pressed; bracts very rarely shorter than florets ..... **3**

3 Basal and at least lower stem leaves adaxially scabrous or slightly roughened by persistent short septate hairs or bristles (apparent at ×10 magnification); rosette usually developed, or at least lower leaves broader and close-spaced; capitula mostly 25 mm diam. or more; plants typically of lowland to foothill heathy woodlands and forests and damp forests, rarely in grasslands ..... **4. *C. scorpioides***

3: Leaves essentially smooth adaxially, devoid of conspicuous septate multi-celled hairs; basal rosette not or rarely developed and lower leaves barely differing from mid-stem leaves; capitula mostly <25 mm diam.; plants chiefly of lowland grasslands and/or montane to alpine woodland or heath ..... **4**

4 Involucral bracts usually lemon-yellow or paler; aerial stems not or sparingly branched; leaves distinctly discolorous, upper surface glabrescent, lower surface with ±appressed cottony hairs, or, if ever ±concolorous then glabrescent throughout; apex acuminate, evenly tapered to thickened, but not mucronate, apex; lower- to mid-stem leaves mostly >4 cm long; length:width ratio >8; generally in grasslands on heavy soils, or riverine woodlands ..... **2. *C. gunnionum***

4: Involucral bracts usually rich yellow to orange; aerial stems often freely branched; leaves ±concolorous or not strongly discolorous, upper surface retaining (often copious) cottony hairs, lower surface with loose woolly hairs; apex acute, with a short (0.5–1 mm) but distinct mucro; lower- to mid-stem leaves mosty <4 cm long; length:width ratio ≤ 8; montane to high-alpine sites ..... **3. *C. monticolo***

subglobular, 6–9 mm long, to 15(–18) mm diam. *Involucral bracts* in 5–8 series, pale to brownish-yellow, transversely wrinkled, only the intermediate ones with significantly developed laminae, to 8 mm long and 1.5 mm wide; bracts internal and external to these shorter and narrower, the innermost sometimes lacerate; claw cottony-ciliate proximally. *Florets* with corollas 2.5–4 mm long, the outermost series usually containing some female-only florets. *Cypselas* ±cylindrical, 1.8–2.3 mm long, glabrous, 4-ribbed. *Pappus* slightly shorter than corolla. Cypselas of outer female florets lacking a pappus or this reduced to 1–few bristles attached centripetally. Flowers (Dec.–) Feb.–Apr. (–Jun.). (Fig. 1)

***Selected specimens (from c. 85) exomined*: NEW SOUTH WALES.** Mount Hyland Nature Reserve, *L.M. Copelond 3526 & I.R. Telford* (BRI, CANB, MEL, NE, NSW); Ellenborough Falls, *L. Hoegi 1490* (NSW); 'Petroi', Cunnawarra National Park, *W.A. Cherry 484 & A.J. Perkins* (BRI, NE, NSW); Mt Wilson, Blue Mtns, *R. Coveny 4094 & R. Bisby* (NSW); Jenolan Caves Rd, 10.iii.1950, *E.F. Constoble s.n.* (NSW); Grassy Gully, 14 miles [22 km] W of Nowra, *F.A. Rodwoy 4679* (K, NSW).

***Distribution and habitat:*** Endemic to New South Wales. Occurs patchily between the Grafton area and Nowra, mostly near-coastal, but also along the Dividing Range (e.g. Dorrigo, Blue Mountains). It is chiefly a species of moist forests and rainforest margins from near sea-level to c. 1250 m at Cunyhame Hill (near Jenolan). (Fig. 9a)

***Notes:*** As well as the distinguishing characters indicated in the key, this species tends to differ in its habit, which is often described by collectors as sprawling. Other members of the *Coronidium scorpioides* group, while rhizomatous and spreading, generally have more-or-less erect above-ground parts. The very fine peduncles are also characteristic of *C. rutidolepis*.

The capitula are generally pale, but a few specimens from the Jenolan Caves area (e.g. *Constable s.n.*, 10.iii.1950, NSW) have more richly coloured involucral bracts and slightly larger capitula than typical, in addition to quite tomentose stems and leaves, perhaps providing evidence of hybridisation with *C. monticola*

NATIONAL HERBARIUM OF VICTORIA (MEL)
Coronidium rutidolepis (DC)N.G.Walsh
Determinavit N.G. Walsh 24.v.2013
National Herbarium of Victoria (MEL)
Coronidium aff. scorpioides (Labill.) Paul G.Wilson 'Foothills'
MELISR
Determinaverunt: N.G. Walsh & V. Stajsic
20 Nov 2008
MEL 2268361
N.C.W. Beadle Herbarium (NE)
The University of New England
Armidale NSW 2351 Australia
Notification of change of determination would be appreciated by NE
NE080329A
Asteraceae
Helichrysum rutidolepis DC.
Australia. New South Wales: Northern Tablelands:
Mount Hyland Nature Reserve, c. 30 km NNE of Ebor, 1.6 km
E of Hardens Rd along Mars Rd.
30° 10' 50" S 152° 25' 20" E 1340 m
Gentle slope, SW aspect. Loamy soil over metasediments.
Disturbed rainforest margin with Doryphora sassafras, Acacia
melanoxylon and Ozothamnus diosmifolius.
Common, localised. Erect herb to 70 cm tall. Flowerheads
yellow.
Coll.: Copeland, L.M. 3526
& Telford,I.R. 30 Dec. 2002
Det.:
Rep(s) to: BRI, CANB, MEL, NSW, Stud.
cm
copyright reserved
Royal Botanic Gardens Melbourne
NATIONAL HERBARIUM OF
VICTORIA (MEL), AUSTRALIA

**Figure 1.** Representative specimen of *Coronidium rutidolepis* (*L.M. Copeland 3526*, MEL 2268361)

which is known to occur in the general area. A specimen from Ellenborough Falls, near Taree (*L. Hoegi 1490*, NSW) is also unusually tomentose.

The holotype at G-DC is clearly labelled in Cunningham's hand 'Grassy spots on the banks of creeks near Port Jackson, April 1824', however, Curry et al. (2001) suggest that in April, Cunningham was some distance from Port Jackson and heading south toward the Monaro district. An April 1824 collection by Cunningham of *Blechnum cortilogineum* Sw. from Stone Quarry Creek near Picton (MEL 2149090) suggests he may have not have been too remote from Port Jackson, at least at the beginning of that month, and perhaps made a small error in dating the collection of *C. rutidolepis*. The description of the habitat and locality is very consistent with its known occurrences.

***Conservation status:*** Although of limited geographic extent, *Coronidium rutidolepis* appears to be locally common, is well represented in reserves and hence is not considered threatened.

## 2. *Coronidium gunnianum* (Hook.) N.G.Walsh **comb. nov.**

*Helichrysum gunnionum* Hook., *Icon. Pl.* t. 320 (1841); *Gnophalium gunnionum* (Hook.) Sch.Bip., *Bot. Zeitung* 3: 172 (1845).

***Type*: TASMANIA.** *R. Gunn 502* (holotype K 910320, photo at MEL!; isotype MEL 2161044!). (Fig. 2)

W.M. Curtis, *Stud. Fl. Tosmonio* 2:328, 329 (1963) *p.p.* as *Helichrysum scorpioides*; N.T. Burbidge & M. Gray, *Fl. A.C.T.* 415 (1970); G.M. Cunningham, W.E. Mulham, P.L. Milthorpe & J.H. Leigh, *Pl. Western New South Woles* 702 (1981); L. Haegi, in J.P. Jessop & H.R. Toelken (eds), *Fl. S. Austrolio* 3:1531;

SGAP, *Fl. Melbourne* edn 1, 114 (1991); J.A. Jeanes in N.G. Walsh & T.J. Entwisle (eds), *Fl. Victorio* 4:785 (1999) *p.p.*; D. & B. Jones, *Native Pl. Melbourne ond odjoining areos* 132 (1999); all as *Helichrysum rutidolepis*.

*Helichrysum erosum* Schldtdl., *Linnoea* 20:595 (1847). *Type*: South Australia. *H. Behr s.n.*, 1844 or 1845 (holotype HAL 98323, photo seen JSTOR* 2000–2013).

*Helichrysum* aff. *rutidolepis* (Lowland Swamps) *sensu* Walsh & Stajsic 2007, pp. 57. 209.

*Coronidium* sp. Lowland Swamps (*V.Stojsic 4226*) Vic. Herbarium *sensu* CHAH (2011).

*Illustrotions.* G.M. Cunningham et al. loc. cit.; L. Haegi loc. cit. p. 1529, fig. 694 G; SGAP loc. cit.; D. & B. Jones loc. cit.; Jeanes loc. cit. p. 786, fig 156b p.p.; all as *Helichrysum rutidolepis*.

Erect rhizomatous *perennial*, to c. 50 cm high, sparingly branched. *Stems* appressed-cottony. *Leaves* linear to oblanceolate, attenuate at base, (15–)20–65 mm long, 1–4(–9) mm wide, discolorous, firm-textured; upper surface smooth, glabrous or with sparse, appressed cottony hairs, sometimes with scattered glands; lamina or lower surface ±obscured by appressed cottony indumentum, with abundant sessile glands; apex acuminate, slightly thickened but not mucronate; margins recurved to revolute. *Peduncles* erect, mostly >1 mm diam., with reduced leaves/bracts extending to capitula and overlapping bases of the involucral bracts. *Capitulo* solitary, subglobular to depressed-turbinate (10–)13–20(–25) mm diam. *Involucral brocts* in 5–8 series, pale yellow to brownish-yellow, transversely wrinkled, only the intermediate ones with significantly developed lamina, 6–10.5 mm long, (1–)1.5–2(–3) mm wide; claw cottony-ciliate proximally. *Florets* with corollas 3.5–5 mm long, the outer series containing some female-only florets. *Cypselas* ±cylindrical, 1.3–1.9 mm long, glabrous, obscurely 4-ribbed. *Poppus* slightly shorter to slightly longer than florets. Female florets usually with a pappus but this sometimes reduced or lacking. Flowers (Nov.–) Feb.–Apr.( –Jun.). (Figs 2–4)

***Selected specimens (from c. 200) examined*: SOUTH AUSTRALIA.** Honans Scrub Reserve, *R. Botes 4811* (AD); Thomas Gully, Mt Bold Reservoir, *T.S. Te 915 & D.J. Duvol, M.C. O'Leory* (HO, MEL, NSW); St Johns Bushland Park, Lobethal, *A.G. Spooner 11008* (AD). **NEW SOUTH WALES.** Glenn Innes, February 1914, *H.M.R. Rupp s.n.* (NSW); Travelling Stock Route, 4.5 km N of Binda, *N. Taws 19B* (CANB, NSW); Chatsbury Travelling Stock Reserve, c. 30.S km NNE of Goulburn, *I. Crawford 7630* (CANB, MEL, NSW); ½ mile [1 km] south of Albury, *E.J. McBorron 4630*; Sunnyside Rd, Rocky Hall, 19.ii.2001, *J. Miles s.n.* (NSW). **VICTORIA.** East of Burns Rd, Laverton North, *S.J. Plott 113* (MEL); Rocky Plains, Suggan Buggan, 21.v.1969, *N.A. Wokefield s.n.* (MEL); Parolus Bridge Track, adjacent to Ovens River, 13.iii.1991, *N.T. Rossiter s.n.* (MEL); Grampians, east side of Victoria Range, *A.C. Beouglehole 30247* (MEL); Jack Smith Lake Wildlife Reserve, *A.C. Beouglehole 7475B* (MEL); 9 km W of Omeo, *P.C. Jobson 1920* (MEL). **TASMANIA.** 'Forsterville', Campbell Town, *L. Gilfedder167* (HO); Clyne Vale, *A. Simson 491* (HO); Seven Mile Beach Rd, *A.M. Buchonon 15527* (HO); Verwood Rd, Forest Lagoon, *A. Brown 169* (AD, AK, CHR, MEL, HO, NSW, RSA, NT)

***Distribution and habitat:*** Occurs through south-eastern Australia from central-eastern New South Wales, north-eastern to south-western Victoria, south-eastern South Australia and eastern Tasmania. A solitary collection apparently from Glen Innes in north-eastern New South Wales (*Rupp s.n.*, NSW 597121) is an isolated outlier. Principally a species of grasslands and riverine woodlands (under *Eucalyptus camaldulensis* Dehnh.) on soils that are prone to inundation. Mostly at low elevations (under c. 100 m a.s.l.), but many populations on the Southern Tablelands of New South Wales and the Australian Capital Territory are from elevations above 700 m, and the Glen Innes collection was probably from around 1000 m. (Fig. 9b)

***Notes:*** A few collections from the higher-altitude parts of the range of *C. gunnianum* such as Cave Ck near Kiandra, New South Wales (e.g. *A.N. Rodd 1655* (NSW)), Cobungra and Wulgulmerang areas in eastern Victoria, (e.g. *Jobson 1920* (MEL), *Wakefield s.n., 21.v.1969* (MEL) respectively) combine features of *C. gunnianum* and *C. monticola* in having brightly coloured capitula and broader leaves with more indumentum adaxially than is typical for *C. gunnianum*. These specimens are morphologically and ecologically intermediate between the two species, typically recorded from treeless 'frost hollows' surrounded by subalpine woodland.

There are some forms of *C. gunnianum* that are somewhat distinctive and a more rigorous study might formally recognise these. One is a short-leaved form with small capitula from grasslands of e.g. the Monaro tableland NSW (e.g. *Crawford 3707* (CANB, NSW), *Taws 948* (CANB, NSW), Fig. 4), but similar plants occur on the Gippsland plain in Victoria at low altitude, and here are sympatric with the more commonly encountered form with longer leaves and broader capitula (e.g. *Platt 113* (MEL), Fig. 3). Plants of intermediate form occur through at least the latter region and occasional specimens may be found with both leaf types. This variation may in part be seasonal. The type represents a form with relatively small capitula and slightly broader leaves than both the above forms (Fig. 2). It occurs in Tasmania and along the Murray River floodplain in Victoria and New South Wales and is linked, geographically (e.g. in the Grampians region, western Victoria) and morphologically with the other forms.

The name *Helichrysum semipapposum* var. *gunnianum* DC., based on a different type, is synonymous with *C. scorpioides* (see below).

***Conservation status:*** This is a relatively infrequently encountered species and, like the lowland grassland communities with which it is commonly associated, it is undoubtedly much reduced from its former range, and is considered vulnerable in Victoria (DSE 2005). This is likely to be an appropriate assessment of its status throughout its range. Many of the southern New South Wales occurrences are from travelling stock routes which are refuges of many rare and/or depleted species.

### 3. *Coronidium monticola* N.G.Walsh **sp. nov.**

***Type*: VICTORIA.** Mt Stirling, eastern slopes near The Monument, *M.G.Corrick 7992* (holotype: MEL 602607; isotypes MEL 602593, NSW 686900). (Fig. 5)

*Helichrysum scorpioides* var. *pygmaeum* F.Muell., *Monthly Notices, Pap. & Proc. Roy. Soc. Tasmania* for 1870: 14 (1871). *Type*: Tasmania. 'Alpine summit of Mt Wellington', *s.d., Abbott & F. Mueller s.n.* (lectotype here chosen: MEL 2161165!).

W.M. Curtis, *Stud. Fl. Tasmania* 2:328, 329 (1963) *p.p.*; N.T. Burbidge & M. Gray, *Fl. A.C.T.* 383 (1970) *p.p.*; A. Costin, M. Gray, C. Totterdell & D. Wimbush, *Kosciuszko Alpine Fl.* 210, 343 (2000); J. Murphy & B. Dowling, *Pl. Victorian High Country*, 50 (2012); all as *Helichrysum scorpioides*.

G.R. Cochrane, B.A. Fuhrer, E.R. Rotherham, J.H. Willis, J. & M. Simmons, *Fl. Pl. Victoria & Tasmania* 102 (1980); J. Everett in G.J. Harden, *Fl. New South Wales* 3:232 (1992) *p.p.*; J.A. Jeanes in N.G. Walsh & T.J. Entwisle (eds), *Fl. Victoria* 4:785 (1999) *p.p.*; M.G. Corrick & B.A. Fuhrer, *Wildfl. Victoria* 23 (2000); all as *Helichrysum rutidolepis*

*Helichrysum* aff. *rutidolepis* (Alps) *sensu* Walsh & Stajsic (2007), pp. 57, 209.

*Coronidium* sp. Alps (*L.A.Craven 2141*) Vic. Herbarium *sensu* CHAH (2011).

*Coronidium* sp. Foothills (*M.G.Corrick 7095*) Vic. Herbarium *sensu* CHAH (2011).

*Illustrations*. Cochrane et al. *loc cit.*; Jeanes *loc. cit.* p. 786, Fig. 156b, *p.p.* as *Helichrysum rutidolepis*; Costin et al. *loc cit.* p. 201 as *Helichrysum rutidolepis*; Murphy & Dowling *loc. cit.* as *Helichrysum scorpioides*; Corrick & Fuhrer *loc. cit.* as *Helichrysum scorpioides*.

Ascending to erect, rhizomatous *perennial*, to c. 35 cm high, often freely branched above base, occasionally

ROYAL BOTANIC GARDENS KEW
K000910320
cm 0 1 2 3 4 5 6 7 8 9 10
copyright reserved
Kew
HERBARIUM 1867
DIVISION OF PLANT INDUSTRY, C.S.I.R.O., CANBERRA, AUSTRALIA
NEGATIVE NO. Kew 1550, 1550a
DATE: 10. xii. 53
FLORA AUSTRALIENSIS named by Mr. BENTHAM.

**Figure 2.** Type specimen of *Coronidium gunnianum* (*R. Gunn s.n.*, K 000910320, reproduced with permission, Royal Botanic Gardens, Kew), typical of lowland swamps and riparian woodlands of southern New South Wales, northern Victoria and Tasmanian midlands

NATIONAL HERBARIUM OF VICTORIA (MEL)
Coronidium gunnianum (Hook.) N.G.Walsh
Determinavit N.G.Walsh 24.V.2013
Royal Botanic Gardens Melbourne
copyright reserved
0 1 2 3 4 5 6 7 8 9 10 cm
National Herbarium of Victoria (MEL)
Coronidium aff. scorpioides (Labill.) Paul G.Wilson 'Lowland Swamps'
MELISR
Determinavit N.G. Walsh & V. Stajsic
20 Nov 2008
MEL 667314
LA TROBE UNIVERSITY
DEPARTMENT OF BOTANY – HERBARIUM
Helichrysum rutidolepis
Loc: Victoria, paddock east of Borns Road, Laverton North. 37°51'S 144°48'E
Coll S Platt No 113 DATE 4 Nov 1983
Notes Frequent in shallow depressions throughout this area.
NATIONAL HERBARIUM OF VICTORIA (MEL), AUSTRALIA

**Figure 3.** Representative specimen of *Coronidium gunnianum* (*S. Platt 113*, MEL 667314); form with large capitula and long leaves, typical of lowland grasslands of southern Victoria and Tasmania

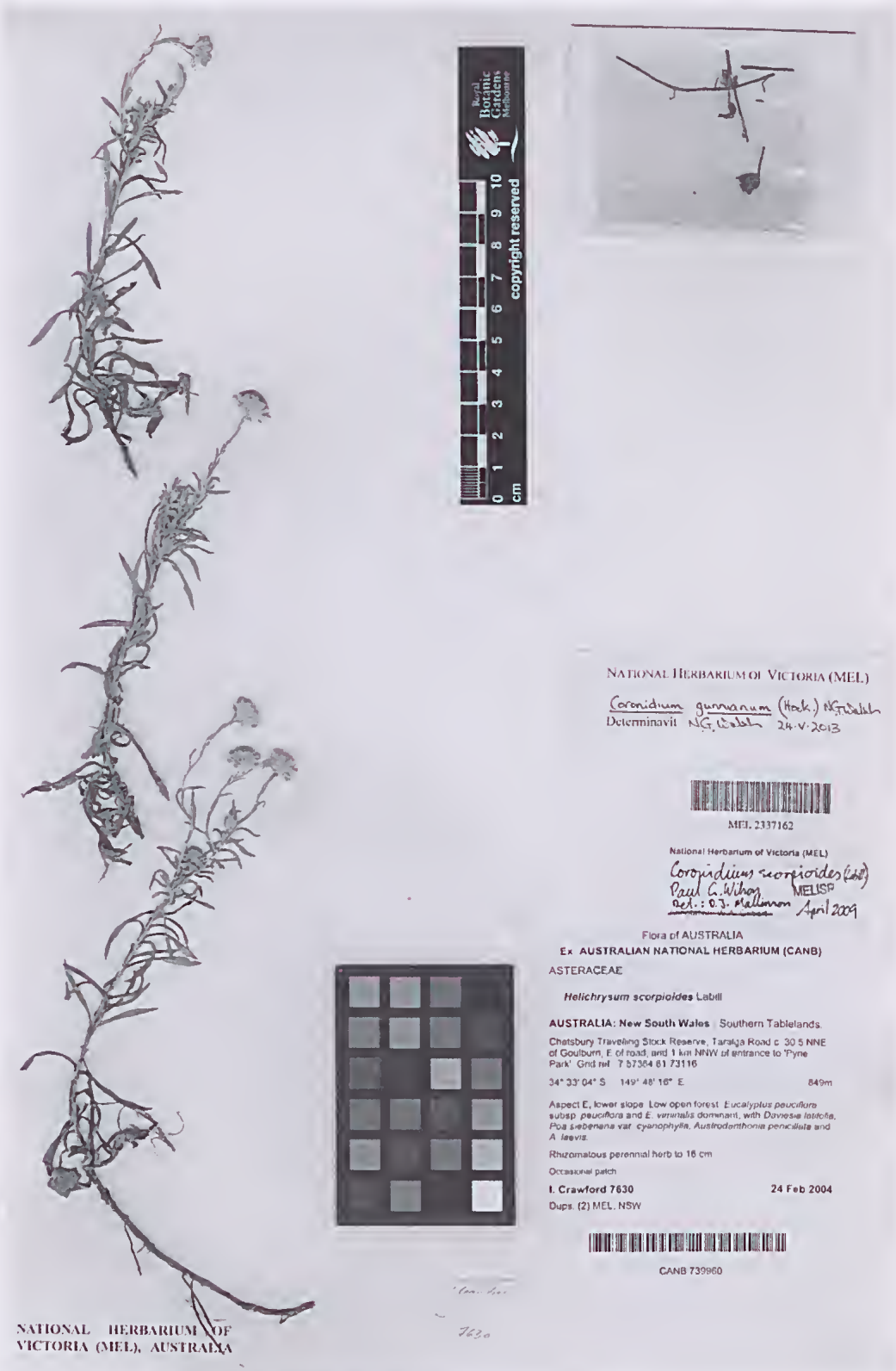

Royal Botanic Gardens Melbourne
0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
NATIONAL HERBARIUM OF VICTORIA (MEL)
Coronidium gunnianum (Hook.) N.G.Walsh
Determinavit N.G. Walsh 24.V.2013
MEL 2337162
National Herbarium of Victoria (MEL)
Coronidium scorpioides (Labill.)
Paul G. Wilson MELISP
Det.: D.J. Mallinson April 2009
Flora of AUSTRALIA
Ex AUSTRALIAN NATIONAL HERBARIUM (CANB)
ASTERACEAE
Helichrysum scorpioides Labill
AUSTRALIA: New South Wales | Southern Tablelands.
Chetsbury Traveling Stock Reserve, Taralga Road c. 30.5 NNE of Goulburn, E of road, and 1 km NNW of entrance to 'Pyne Park' Grid ref. 7 57364 61 73116
34° 33' 04" S 149° 48' 16" E 849m
Aspect E, lower slope. Low open forest. Eucalyptus pauciflora subsp. pauciflora and E. viminalis dominant, with Daviesia latifolia, Poa sieberiana var. cyanophylla, Austrodanthonia penicillata and A. laevis.
Rhizomatous perennial herb to 16 cm
Occasional patch
I. Crawford 7630 24 Feb 2004
Dups. (2) MEL, NSW
CANB 739960
NATIONAL HERBARIUM OF VICTORIA (MEL), AUSTRALIA
7630

**Figure 4.** Representative specimen of *Coronidium gunnionum* (*I. Crowford 7630*, MEL 2337162); form with small capitula and short leaves, typical of New South Wales tablelands

simple. *Stems* densely cottony, glands present but usually obscured. *Leaves* obovate to oblanceolate, 20–50 mm long, 3–12 mm wide, attenuate at base, ±concolorous or at least, not strongly discolorous, firm-textured; upper surface smooth, cottony, often densely so, lower surface cottony to densely woolly, with many glands, but these mostly obscured by indumentum; apex obtuse to acute, shortly mucronate (mucro 0.5–1 mm long); margins recurved, rarely flat. *Peduncles* erect, mostly c. 1.5 mm diam. below capitulum; uppermost bracts overlapping base of involucre. *Capitula* solitary, depressed-hemispherical, 18–30 mm diam. *Involucral bracts* in c. 7–10 series, bright golden yellow to orange, transversely wrinkled, the intermediate ones oblanceolate to spathulate, 10–13 mm long, 2.5–3 mm wide; claws cottony-ciliate proximally. *Florets* with corollas 4–5.5 mm long, the outer 2–4 series of female-only florets. *Cypselas* narrowly cylindrical, 2–2.5 mm long, 4-ribbed, glabrous. *Pappus* subequal to or slightly exceeding corolla. Pappus of female florets complete or somewhat reduced centrifugally. Flowers Jan.–Mar. (–Apr.). (Fig. 5)

***Selected specimens (from c. 170) examined*: NEW SOUTH WALES.** 3.5 km SW from Charlottes Pass, *M. Ito 96042 & T. Nishina, Y. Kita* (MEL, NSW); Bombala River, c. 17 km NE of Bibbenluke, *I. Crawford 825* (CANB, MEL); 10 km N of Ingebyra on road to Jindabyne, *L. Haegi 2730* (AD, NSW); Gudgenby, Queanbeyan, 14.i.1912, *R.H. Cambage s.n.* (NSW). **AUSTRALIAN CAPITAL TERRITORY.** Ginini Flat, Brindabella Range, *T.G. Hartley 13646* (CANB, NSW). **VICTORIA.** Panorama Hill, Falls Creek, *D.E. Albrecht 251* (AD, MEL); Clover Flat, 47 km NE of Licola, *P.C. Jobson 1982* (MEL); Mt Buller, *R. Melville 3215* (K, MEL); Near Sassafras Pass, *G.W. Carr 5794* (MEL). **TASMANIA.** Headwaters of Mountain River, Mount Wellington, *A.E. Orchard 5206* (HO, MEL); Ben Lomond National Park, near Ranger Headquarters, *M.G. Noble 28428* (HO, MEL); Quamby Bluff summit, *A. Moscal 12597* (HO, MEL); Pine Lake, *A.E. Orchard 5821* (HO); Mt Barrow, *A.C. Razefelds 170* (HO)

***Distribution and habitat:*** Occurs through higher parts of the Great Dividing Range and adjacent outliers from c. Braidwood, New South Wales, through the Australian Capital Territory to Mt Buller and Mt Useful areas, Victoria. In Tasmania, it occurs in the north-east mountains (Mt Barrow, Ben Lomond), the Central Plateau area and on and near Mt Wellington near Hobart. It appears to be absent from south-western mountains. The altitude range is from about 1000 m, where associated with montane forests of e.g. *Eucalyptus delegatensis* R.T.Baker, up to and beyond the treeline to c. 2100 m near the summit of Mt Kosciuszko. Soils are often gravelly or rocky and usually well-drained. (Fig. 9c)

***Notes:*** In general, plants at higher altitudes are more densely cottony, often appearing grey-white overall, and usually of reduced stature and less branched compared to those at the lower part of the range. The type of *Helichrysum scorpioides* var. *pygmaeum* F.Muell. is of an extremely reduced form from Mt Wellington, Tasmania. From herbarium collections, this form seems to be particularly prevalent on that mountain, but similar plants are found on other exposed summits (e.g. Mt Kosciuszko, New South Wales and Mt Feathertop, Victoria).

Mueller labelled a collection of his from 'summit of Mt Timbertop' (MEL 1517347) as *Helichrysum scorpioides* var. *montanum* F.Muell., but this name does not appear to have been published. This specimen is of the lower-altitude form of the species – i.e. with leaves having relatively light indumentum on adaxial surfaces.

See notes under *C. rutidolepis*, *C. gunnianum* and *C. scorpioides* relating to plants of somewhat intermediate character.

The type specimen has been selected to represent the commonest, most widespread form (in my experience), rather than the very reduced, woolly tomentose form encountered on exposed summits.

***Conservation status:*** Widespread in montane to alpine areas through its range and well represented in national parks and other reserves. It is not regarded as rare or threatened.

***Etymology:*** From the Latin *mons* – mountain and *cola* – a dweller, referring to its habitat.

### 4. *Coronidium scorpioides* (Labill.) Paul G.Wilson, *Nuytsia* 18:326 (2008)

*Helichrysum scorpioides* Labill., *Nov. Holl. Pl. Sp.* 2:45, t. 191 (1806); N.C.W. Beadle et al., *Handb. Vasc. Pl. Sydney Dist.* 386 (1962); W.M. Curtis, *Stud. Fl. Tasmania* 2:328, 329 (1963) *p.p.*; N.T. Burbidge & M. Gray, *Fl. A.C.T.* 383 (1970); N.C.W. Beadle et al., *Fl. Sydney Region* 475 (1963, 1972); L. Haegi in J.P. Jessop & H.R. Toelken (eds), *Fl. S. Australia* 3:1529 1986); A. Fairley & P. Moore, *Native Pl. Sydney District* 317 (1989); G.R.A. Dashorst & J.P. Jessop, *Pl. Adelaide Plains & Hills* 150, 151 (1990); L. Robinson, *Field*

**Figure 5.** Type specimen of *Coronidium monticola* (*M.G. Corrick 7992*, MEL 602607)

*Guide Native Pl. Sydney Region* 139 (1991); SGAP, *Flora of Melbourne* edn 1, 114 (1991); R.C. Carolin & M.D. Tindale, *Fl. Sydney Region*, 4th edn, 554 (1994), 5th edn 470 (2009); J. Everett in G.J. Harden, *Fl. New South Wales* 3:232, pl. 13 (1992); J.A. Jeanes in N.G. Walsh & T.J. Entwisle (eds), *Fl. Victoria* 4:784 (1999); D. & B. Jones, *Native Pl. Melbourne and adjoining areas* 132 (1999); M.G. Corrick & B.A. Fuhrer, *Wildfl. Victoria* 23 (2000); E. Mayfield, *Fl. Otway Plain & Ranges* 2:76 (2013). *Gnaphalium scorpioides* (Labill.) Poir. in Lam. & Poir., *Encycl. Suppl.* 2:808 (1812); *Xeranthemum scorpioides* (Labill.) Poir. in Lam. & Poir., *Encycl. Suppl.* 3:143 (1813).

***Type*: TASMANIA.** *'in capite Van-Diemen', J.J.H. Labillardière* (holotype FI 94140 (photo seen); isotypes: MEL 1586096!, G-DC, (photo seen), G (Herb. Boissier, photo seen); HAL (111521, photo seen JSTOR* 2000–2013); possible isotype P (698477, photo seen JSTOR* 2000–2013)).

*Helichrysum buphthalmoides* Sieber ex Spreng., *Syst. Veg.* 3:484 (1126). *Type*: New South Wales. 'Nov. Holl.' *F. Sieber 333, fide* DC., *Prodr.* 6:194 (1838), (isotypes G-DC (photo seen), G (Herb. Boissier; photo seen), GH (14328, photo seen JSTOR*), HAL (111520, photo seen JSTOR* 2000–2013)).

*Helichrysum semipapposum* var. *gunnianum* DC., *Prodr.* 6:195 (1838). *Type:* Tasmania. *R. Gunn* (lectotype, here selected *Gunn 248* (G-DC photo seen); residual syntype *Gunn 262* (G, herb. Boissier, photo seen)).

*Illustrations.* Haegi *loc. cit*, 1529, fig. 694H; Fairley & Moore, *loc. cit.* 317; Dashorst & Jessop *loc. cit.*; Robinson, *loc. cit.* 139; Everett, *loc. cit.* p. 232; Jeanes *loc. cit.* 786fig. 156a; Corrick & Fuhrer *loc. cit.* all as *Helichrysum scorpioides*; E. Mayfield *loc. cit.*

Ascending to erect rhizomatous *perennial* 5–55 cm high. *Stems* simple or few-branched usually from a basal rosette, cottony and minutely glandular. *Rosette leaves* (when present) obovate to oblanceolate, mostly (20–)30–90 mm long, 3–14(–21) mm wide; *stem leaves* similar but narrower with attenuate apices, becoming ±linear, usually discolorous, moderately firm-textured; upper surface hispid to scabrous from retained bases of coarse septate hairs 0.3–0.7 mm long, sometimes overlain with fine cottony hairs; lower surface with cottony hairs, interspersed with numerous sessile or subsessile glands; apex obtuse to acute, usually with a distinct mucro c. 0.5–1 mm long; margins flat to recurved. *Peduncles* erect, c. 1.5–2.5 mm diam. below capitulum, with uppermost leaves/bracts subtending and overlapping the base of the involucre. *Capitula* solitary, depressed-hemispherical, 20–35 mm diam. *Involucral bracts* in 5–8 series, usually pale or lemon-yellow, rarely golden-yellow, transversely wrinkled, the intermediate ones spathulate, 8–14 mm long, 2.5–3.5 mm wide; claws cottony-ciliate proximally. *Florets* with corollas 4.5–7.5 mm long, the outermost series with some female-only. *Cypselas* narrowly cylindrical, 2–3.5 mm long, 4-ribbed, glabrous. *Pappus* equal to or slightly exceeding corolla. Pappus of outer female florets normally developed. *n*=24 (Watanabe et al. 1999:785) or c. 42 (Carr et al. 1999:1003; voucher specimens of both counts confirmed at MEL). Flowers (Sep.–)Oct.–Jan. (–Feb.). (Figs 6, 7)

***Selected specimens (from c. 835) examined*: SOUTH AUSTRALIA.** c. 25 km N of Lucindale, *J.Z. Weber 7337* (AD, MEL); Rivoli Bay, Oct. 1848, *F. Mueller s.n.* (MEL); Douglas Gully Scrub, *A.W. Bell 104* (AD, MEL). **QUEENSLAND.** c. 1 km SW of Amys Peak, Kroombit Tops State Forest, *E.J. Thompson BIL73 & B.K.Symon, P. Sharpe* (BRI, NSW). **NEW SOUTH WALES.** 'Wattleridge', c. 5 km N of Backwater, *K.A.McColl 12/9B & J. Plaza* (BRI, NSW); Dumaresq Dam, 10 km NW of Armidale, *L.M. Copeland 3899 & D.M. Raets* (BRI, CANB, MEL, NE, NSW, PERTH); Old Bell's Line, Mount Tomah, *C.K. Ingram 27384* (NSW); Green Cape, *J. Armstrong 731* (NSW). **AUSTRALIAN CAPITAL TERRITORY.** Near Gibraltar Falls, *G. Stewart 374 & B. O'Shea, S. Young* (CANB, NSW). **VICTORIA.** Jamieson Rd, 18 miles [30 km] from Eildon, *T.B. Muir 1634* (MEL); Grampians, *K. Watanabe 224 & T. Denda, Y. Suzuki* (MEL, TI); 4.6 km W of Genoa, *J.H. Ross 3523 & C.A. Coles* (AD, CANB, HO, MEL, NSW, S); Point Danger, 6 km SE from Portland, *N.G. Walsh 5680 & Z. Smith* (MEL). **TASMANIA.** Near Bellerive, *F.H. Long 550* (HO); Waldheim Chalet, 7.iii.1949, *W.M. Curtis s.n.* (HO); Georgetown, *T.E. Burns 95* (HO); Coles Bay, *A.M. Buchanan 205* (HO); The Neck, Bruny Island, *A.T. Dobson 77268* (CHR, HO); Fortescue Bay, track to Cape Hauy, *A.Brown 88* (AD, AK, HO, MEL).

***Distribution and habitat:*** Widespread and common through south-eastern Australia from near the Queensland–New South Wales border to Port Lincoln, South Australia and through most of Tasmania. Occurrences are generally confined to sites within c. 250 km of the coast. An outlying occurrence in the north is known from Kroombit Tops (central-eastern Queensland) with apparently no intervening records. Habitats in which *C. scorpioides* occurs are diverse, but usually reasonably well-drained open forest to heathy

**Figure 6.** Representative specimen of *Coronidium scorpioides* (*T.B. Muir* 1634, MEL 2160245); typical form with well-developed basal rosette, unbranched scape and large capitulum

NSW
LOAN. 2012/2
NSW686940
cm 0 1 2 3 4 5 6 7 8 9 10
copyright reserved
Royal Botanic Gardens Melbourne
NATIONAL HERBARIUM OF VICTORIA (MEL)
Coronidium scorpioides (Labill.) Paul G. Wilson
Determinavit N.G. Walsh 24·V·2013
NATIONAL HERBARIUM OF N.S.W
Coronidium scorpioides (Labill.) Paul G. Wilson
DET: per Paul G Wilson in Nuytsia 18:295-329 (2008) Nov 2008
Accepted Name
Herb BRI
EX QUEENSLAND HERBARIUM (BRI)
Flora of Queensland
Port Curtis
Leucochrysum
Coll E J Thompson BIL73
+B K Simon P Sharpe
17 MAR 1995
24°20'S 150°58'E
Alt 900 m
Depth m
Site about 1km SW of Ayrys Peak, Kroombit Tops State Forest
(GPS 24 20 54 150 58 47)(site 59)
Woodland of Eucalyptus andrewsii and Eucalyptus trachyphloia on plateau
Brown sandy loam derived from sandstone
Det E J Thompson MAY 1995
Compositae
Dups NSW
"May be cited as computerised collection number AQ 571402
NSW686940

**Figure 7.** Representative specimen of *Coronidium scorpioides* (*E.J. Thompson BIL73*, NSW 686940); form with poorly developed basal rosette, branched scape and smaller capitula

woodlands, rarely grasslands or heathland, from near sea-level to c. 800 m a.s.l. (Fig. 9d)

***Notes:*** The form represented by the type, with short near-basal internodes forming a rosette-like base and simple or rarely-branched scapes, is common throughout the range of the species (Fig. 6). In some areas, and particularly in the northern part of the range, more freely-branched plants lacking a rosette-like base may be common (Fig. 7). The capitula of this form are often smaller than the typical form, and the leaves and stem bracts inclined to be narrower with more revolute margins and adaxial surfaces distinctly scabrous rather than merely hispid from the persistent hair bases. At their extremes these two forms appear distinct, but they are linked by such a confusing array of intermediate forms that I have not been able to separate them satisfactorily.

A few specimens exist that could be regarded as intermediate between *C. scorpioides* and *C. monticola* (e.g. Pine Lake Tasmania, *T.E. Burns 665* (HO), Mt Arthur summit, *A.M. Buchonon 7* (HO)) and *C. scorpioides* and *C. gunnianum* (Vale of Belvoir Tasmania, *M. Visoiu 587* (HO)). These 'intermediates' are in habitats that could be interpreted as being transitional (in terms of altitude and landform) between characteristic habitats of the two species involved.

***Note on synonymy:*** In de Candolle's *Prodromus* (1838), the entry for 'var. *gunnionum*' appears directly beneath *Helichrysum semipapposum* (Labill.) DC. (p. 195) rather than with *H. scorpioides* (p. 194), but in the accompanying diagnosis, it is distinguished from *H. scorpioides*, and the collections in G-DC clearly show this to have been labelled by de Candolle as *H. scorpioides* var. *gunnianum*. The section in which *H. semipopposum* is included is characterised by 'capitulis corymbosis' a trait clearly not applicable to *H. scorpioides* or the other five taxa in that group (section 'capitulis solitariis') in the *Prodromus*. The placement of the protologue for var. *gunnionum* appears to be an error. The two syntype specimens of *Helichrysum semipapposum* var. *gunnionum* in G-DC (*Gunn 248* and *Gunn 262*) are fragmentary, but both are from plants with distinctly hispid leaves, unlike those of *C. gunnianum*. The more complete of the two, *Gunn 242* is chosen as the lectotype specimen. The leaves of these specimens are somewhat narrower than in Labillardière's type specimens of *Helichrysum scorpioides* but I have no doubt that the name *H. semipopposum* var. *gunnionum* should be placed in synonymy under what is here recognised as *C. scorpioides*.

***Conservation status:*** *Coronidium scorpioides* is the most common and widespread member of the complex. It is well reserved in national parks etc. and is not regarded as rare or threatened.

### 5. *Coronidium densifolium* J.M.Black ex N.G.Walsh **sp. nov.**

***Type:*** **SOUTH AUSTRALIA.** Lower Mt Lofty Range, Black Swamp (c. 25 km NNE of Victor Harbour on railway), 25.iv.1968, *J.B.Clelond s.n.* (holotype: AD 97308301!). (Fig. 8)

Ascending to erect ?rhizomatous *perenniol*, to c. 12 cm high, branches numerous from base and along main stems, the whole plant probably domed *in vivo*. *Stems* densely woolly but largely hidden by leaves (internodes shorter than leaves). *Leoves* lanceolate to oblanceolate, 15–30 mm long, 3–6 mm wide, both surfaces initially cottony, but finally hispid to scabrous from retained coarse septate hair-bases c. 0.3 mm long, interspersed (both surfaces) with numerous sessile or subsessile glands, c. concolorous, papery or a little thicker-textured, margins flat to recurved. *Peduncles* barely elongated, erect, c. 1.5–2 mm diam. below capitulum, with stem leaves/bracts not much reduced, subtending and overlapping the outer involucral bracts. *Copitula* solitary, seemingly almost sessile at tips of branches, ±hemispherical, 10–15 mm diam. *Involucrol brocts* in 5–8 series, pale yellow to brownish-yellow, transversely wrinkled, the intermediate ones oblanceolate to spathulate, 5–7(–8) mm long, 1.2–1.8 mm wide, all but the innermost transversely wrinkled to some degree; claws cottony-ciliate proximally. *Florets* with corollas c. 4 mm long, the outermost series including some female-only florets. All florets with well-developed pappus 3.5–4 mm long, slightly shorter than florets. Cypselas narrow-cylindrical, c. 1.5 mm long (immature only), 4-ribbed, glabrous,. Flowers Sep.–Jan.(–Apr.) (4 records only). (Fig. 8)

***Specimens examined:*** **SOUTH AUSTRALIA.** Encounter Bay, 6.ix.1924. *J.B. Cleland s.n.* (AD); Encounter Bay, Cape Jervis Rd, 24.i.1948, *J.B. Cleland s.n.* (AD, 2 sheets); Encounter Bay, Cape Jervis Rd, 20.i.1948, *J.B. Cleland s.n.* (AD) [note by J.M. Black on latter specimen notes 'Jervis Bay Rd near Air-pylon'].

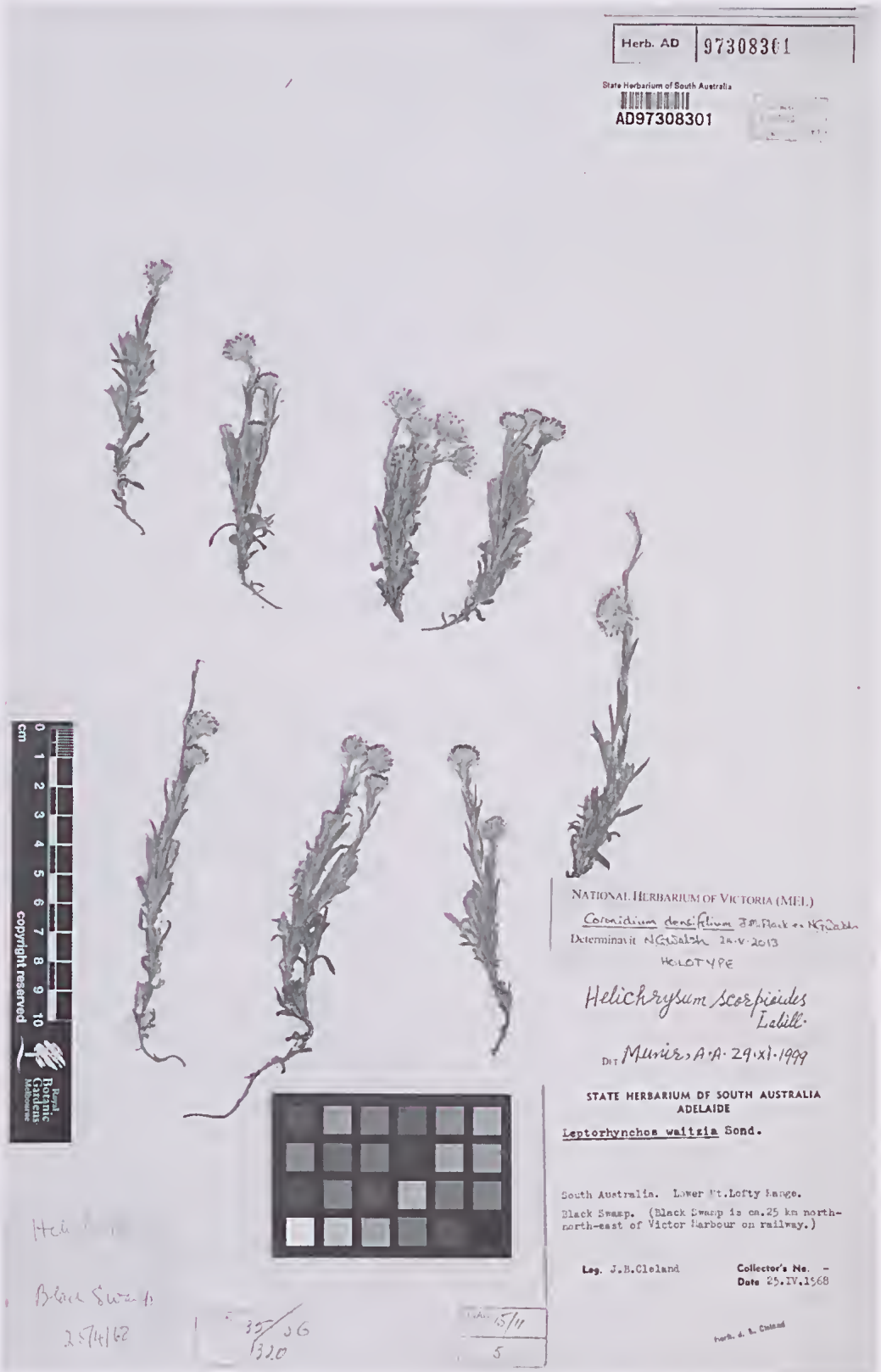



**Figure 8.** Type specimen of *Coronidium densifolium* (*J.B. Cleland s.n.*, AD 97308301)

***Distribution and habitat:*** Although there are no extant populations known, from the locality information the species probably inhabited broombush (*Melaleuca uncinata* R.Br.) and mallee on laterite soils and/or open woodland and heath, including *Banksia ornata* Meisn., over white sands (D. Duval, pers. comm.). (Fig. 9a)

***Notes:*** Despite searches in the type and other presumed suitable localities by botanists with a good knowledge of the local flora, no further populations of *C. densifolium* have been discovered (D. Duval, R. Bates, pers. comm.). The few specimens of this plant were collected over a period of more than 40 years from at least two distinct localities. Nonetheless, absence of mature seed may suggest that it is a rarely occurring, sterile 'sport' of *C. scorpioides* (inferred by the conspicuous septate indumentum of the leaves). Most of the inflorescences on the specimens are relatively young and the few apparently mature capitula have been heavily predated by insect larvae (which is very common in this group). What appears to be normal pollen is present in open florets.

***Conservation status:*** Until further collections of *C. densifolium* can confirm otherwise, it must be regarded as extinct.

***Etymology:*** The epithet was one used by J.M. Black on the two collections made before his death in 1951. It was never published, but is appropriate to the leafiest of the members of the *C. scorpioides* complex, and is formalised here.

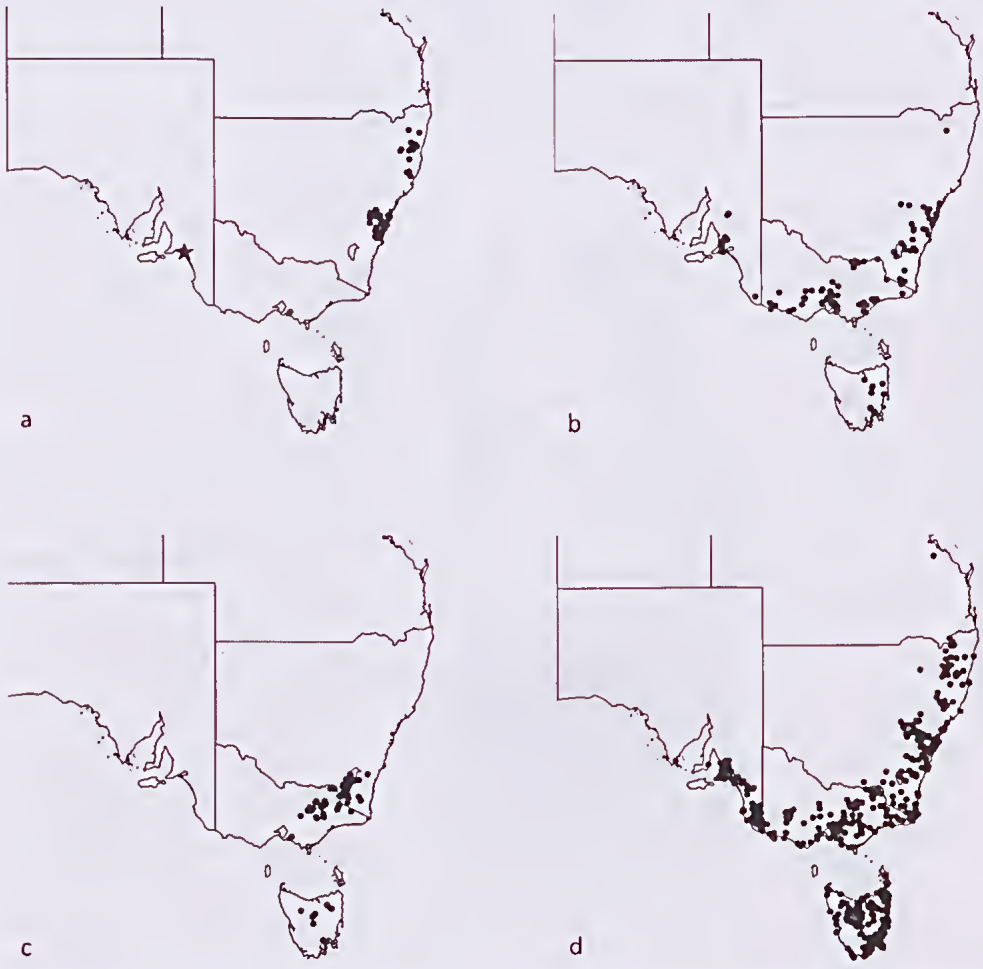



**Figure 9.** Distribution of **a.** *Coronidium rutidolepis* (dots), *C. densifolium* (star); **b.** *C. gunnianum*; **c.** *C. monticola*; **d.** *C. scorpioides*

## Acknowledgements

I am most grateful for the assistance of herbarium staff from AD, HO and NSW for provision of loans, to Nicholas Hind and Nicola Biggs (K) and Chiara Nepi and Egildo Luccioli (FI) for provision of images of types from those herbaria, to Andre Messina and Tony Orchard who kindly photographed types at G, and to Val Stajsic (MEL), Dan Duval (AD) and Rob Bates for useful discussions on the taxonomy and ecology of members of this group, and to Pina Milne and Taryn Ellis (both MEL) for imaging specimens. Members of the former Daisy Study Group of the Australian Plants Society, in particular Judy Barker and Natalie Peate, kindly provided copies of relevant correspondence to and from the late Esma Salkin who had a long interest in the *Helichrysum scorpioides* (as she knew it) complex.

I have found the JSTOR® Global Plants facility <http://plants.jstor.org> particularly useful in tracing previously unrecorded types.

Two referees made valuable suggestions to improve the manuscript.

## References

Candolle, A.P. de (1838). *Pradromus systemis naturalis regni vegetobilis*, pars VI. Treuttel et Wurtz: Paris.

Carr, G.D., King, R.M., Powell, A.M. and Robinson, H. (1999). Chromosome numbers in Compositae. XVIII. *American Journal of Botany* **86**, 1003–1013.

CHAH (Council of Heads of Australian Herbaria) (2011) *Australian Plant Census*. Accessed 24 May, 2013 <http://www.chah.gov.au/apc/index.html>.

Costin, A.B., Gray, M, Totterdell, C.J. and Wimbush, D.J. (2000) *Kosciuszka alpine flora*. CSIRO Publishing: Collingwood, Victoria.

Curry S., Maslin, B and Maslin, J. (2001). *Allan Cunninghom, Australian collecting localities*. ABRS, Canberra.

DSE (Department of Sustainability and Environment) (2005). *Advisory list of rare or threatened plants in Victoria*. Department of Sustainability and Environment: Melbourne. Accessed 15 May, 2013 <http://www.dse.vic.gov.au/__data/assets/pdf_file/0005/103388/Advisory_List_of_Rare_or_Threatened_Plants_in_Victoria_-_2005.pdf>.

Everett, J. (1992) '*Helichrysum*', in G.J. Harden (ed.), *Flora of New South Wales* **3**, 230–233. University of New South Wales Press: Kensington.

Haegi L. (1986). '*Helichrysum*', in J.P. Jessop and H.R. Toelken (eds), *Flora of South Australia* **3**, 1523–1538. South Australian Government Printer: Adelaide.

JSTOR® (2000–2013). *Global Plants*. ITHAKA®. Accessed 22 May, 2013 <http://plants.jstor.org/>

Jeanes J.A. (1999). '*Helichrysum*', in N.G. Walsh and T.J. Entwisle (eds), *Flora of Victoria* **4**, 784–787. Inkata Press: Melbourne.

Rass, J.H. and Walsh, N.G. (2003). *A census of the vascular plants of Victoria*, edn 7. Royal Botanic Gardens Melbourne.

Walsh, N.G. and Stajsic, V. (2007). *A census of the vascular plants of Victoria*, edn 8. Royal Botanic Gardens Melbourne.

Watanabe, K., Shart, P.S., Denda, T., Konishi, N., Ita, M. and Kasuge, K. (1999). Asteraceae: chromasome numbers and karyotypes in the Australian Gnaphalieae and Plucheeae. *Australian Systemotic Botany* **12**, 781–802.

Wilson, P.G. (2008). *Coronidium*, a new Australian genus in the Gnaphalieae (Asteraceae). *Nuytsia* **18**, 295–329.

# Notes on *Olearia* (Asteraceae: Astereae) in south-east Australia: *O. tenuifolia*, *O. adenophora* and description of a new species endemic to eastern Victoria

Neville Walsh

National Herbarium of Victoria, Royal Botanic Gardens Melbourne, Private Bag 2000, Birdwood Ave, South Yarra, Victoria 3141, Australia; e-mail: neville.walsh@rbg.vic.gov.au

## Abstract

*Oleoria odenophora* (F.Muell.) Benth. is reduced to synonymy under *O. tenuifalia* (DC.) Benth., and a new name, *O. curticomo* N.G.Walsh, is provided for the population formerly treated as *O. tenuifolio* at Billygoat Bend on the Mitchell River in eastern Victoria.

***Key words:*** Billygoat Bend, daisy bush

*Muelleria* 32:34–38 (2014)

## Introduction

While moderately widespread in south-central to south-eastern New South Wales, *Olearia tenuifolia* (DC.) Benth. is currently recognised in Victoria from a single disjunct population at Billygoat Bend above the Mitchell River, north-west of Bairnsdale in eastern Victoria. However, as noted by Walsh and Lander (1999), the Victorian plants differ from other specimens in lacking glandular hairs on the stems. Closer inspection reveals a few other important distinctions that warrant recognition of the Victorian population as a distinct entity, apparently of very restricted distribution.

In the course of examination of specimens of 'true' *O. tenuifolia* from across its range to determine the limits of its variation, it became apparent that *O. adenophora* (F.Muell.) Benth., previously regarded as being largely (or wholly) restricted to eastern Victoria, was at least closely related to the former and needed to be considered to allow proper circumscription and comparison to the new taxon. The following summarises the findings of this study.

### *Olearia tenuifolia* and *O. adenophora*

The type specimens (at G-DC) of *Olearia tenuifolia* were collected by Allan Cunningham in New South Wales, near the 'Cageegangrivier' [Cudgegong River] and Bathurst. *Eurybia tenuifolia* var. *bathurstiana* DC., based on the latter of these specimens, has less acute tips to the involucral bracts. It was not maintained by Bentham who presumably regarded the differences as trivial, a view supported here. Similar specimens may be found throughout the range of the species with no other apparent distinction. Notes by Cunningham associated with the specimens indicate an association with dry rocky country, a feature consistent across its distribution from the Cudgegong River south and east to the Australian Capital Territory and adjacent areas of New South Wales, as well as the isolated Victorian population at Billygoat Bend. Throughout its range, except in Victoria, the

stems, peduncles and usually the leaves, are variably covered with short erect, gland-tipped hairs imparting a viscid quality to these organs. Victorian plants currently referred to *O. tenuifolia* (i.e. those from Billygoat Bend) are also extremely viscid, but *inter alia*, lack the hairs of specimens from other areas. However, within Victoria, *Olearia adenophora*, occupies similar elevated rocky sites and is also viscid and hairy. As currently understood, *O. adenophora* occurs in generally small, isolated populations from near Maffra eastward to the New South Wales border, with isolated occurrences north and west to as far as West Wyalong (CHAH 2013), although it is currently not recognised in the New South Wales flora (Lander 1992; Royal Botanic Gardens and Domain Trust 2013). Specimens representing its occurrence in New South Wales derive from CANB and MEL. *Olearia tenuifolia* and *O. adenophora* are undoubtedly close and their shared attributes, similar habitats and contiguous or overlapping distribution (depending on whether its occurrence in New South Wales is accepted or not) invited closer scrutiny.

## Materials and methods

Specimens of both *Olearia adenophora* and *O. tenuifolia* at MEL and CANB, and high-resolution photographs of material determined by de Candolle as *O. tenuifolia* at G-DC and P were carefully examined. Type material of *O. tenuifolia* at G-DC was examined by Nicolas Fumeaux from that institution at my request. Features that have been used in the literature to define or distinguish the two species, namely indumentum, leaf size, involucre size and composition, and features of the cypsela were particularly scrutinised.

## Discussion

Cunningham's collections, the types of *Olearia tenuifolia*, have entire, narrow-linear leaves that are moderately glandular-pubescent. Mueller's type of *O. adenophora* has leaves that are oblong with slightly sinuate margins and are densely glandular-pubescent. However, across the range of two species, these characters are transitional and the types are near to the extremes in the traits of leaf shape and density of pubescence – i.e. the type of *O. tenuifolia* is nearly the least pubescent and narrowest-leaved of all specimens, while the type of *O. adenophora* has nearly the broadest, most distinctly sinuate and most heavily indumented leaves. In areas near Canberra, populations could be attributed with equal (un)certainty to either species based on type specimen concepts. Specimens collected to the north of this area incline to the '*tenuifolia*' type with narrow linear leaves, and to the south plants are more likely to have slightly broader leaves, often with slightly sinuate margins. I can find no reliable difference to maintain a formal distinction between the two, even at infraspecific level, and propose that *O. adenophora* be reduced to synonymy under *O. tenuifolia*. Plants from Victoria previously included in *O. tenuifolia* fit well outside the range of variation discussed here. These plants lack hairs on stems and leaves, have inflorescences of single capitula, and larger cypselas with a much shorter pappus.

In retrospect, it is surprising that, despite not recognising *Eurybia tenuifolia* var. *bathurstiana*, Bentham (1867) maintained a distinction between the two species although, inevitably, he would have had incomplete representation of the variation and geographic distribution of them. The key to *Olearia* in *Flora Australiensis* (Bentham, 1867, 3: 467) distinguishes the two primarily on the nature of the pubescence – 'slightly glandular pubescent' for *O. tenuifolia* and 'very viscid-pubescent or hirsute' for *O. adenophora*. Comparing the (adjacent) descriptions of the two species, Bentham (1867) notes features of leaf length (half to one inch long in *O. tenuifolia*, mostly above one inch long in *O. adenophora*), capitulum size and arrangement, and ray floret number (to 15 per capitulum in *O. tenuifolia*, 20 or more per capitulum in *O. adenophora*, although Walsh and Lander (1999) give 12–18 florets for *O. adenophora* based on Victorian specimens alone). There was no consistency of association of Bentham's diagnostic features across the range of over 90 specimens examined in the course of this study. Nonetheless, plants with the broadest leaves, densest indumentum and largest capitula (according to Mueller's type of *O. adenophora*) occur in the southern part of the combined range.

There is no mention of *Eurybia tenuifolia* in the description of *Eurybia adenophora* F.Muell., which suggests that Mueller may have been unaware of the former species. There are no examples of *Olearia*

*tenuifolia* at MEL collected prior to 1887, 18 years after Mueller's description of *E. adenophora*, further suggesting that Mueller had no previous access to material of that name.

## Taxonomy

### ***Olearia tenuifolia*** (DC.) Benth., *Fl. Austral.* 3:486 (1867)

*Eurybia tenuifolia* DC., *Prodr.* 5:269 (1836)

***Type*: NEW SOUTH WALES.** Among dense shrubs investing the base of a pine (*Callitris*) range in the country on the north of the Cageegang [Cudgegong] River, *A. Cunningham 4*, May 1825 (lecto, here selected: G-DC, photo seen).

*Eurybia tenuifolia* var. *bathurstiana* DC., Prodr. 5:269 (1836). *Type:* New South Wales. ... in barren scrub near Bathurst, *A. Cunningham 13*, 13 April 1817. (holo: G-DC, photo seen).

*Eurybia adenophora* F.Muell., *Fragm.* 1:111 (1859). *Type:* Victoria. 'Ad latera montium petraeorum juxta flumen McAllister alt. 2–3000', Jan 1859, *F. Mueller s.n.* (holo: MEL 681752; iso: K, photo seen).

*Aster adenophorus* (F.Muell.) F.Muell., *Fragm.* 5: 78 (1865)

*Olearia adenophora* (F.Muell.) F.Muell., *Fragm.* 5: 78 (1865), *nom. inval.*, (name appears in synonymy only)

*Olearia adenophora* (F.Muell.) Benth., *Fl. Austral.* 3:486 (1867)

*Olearia rupicola* J.H.Willis, *nom. inval.*, (unpubl. name on herbarium sheet only)

### ***Olearia curticoma*** N.G.Walsh **sp. nov.**

***Type*: VICTORIA.** Mitchell River National Park, Billygoat Bend, *N.G.Walsh 7813, J.P. Walsh & R.J. Bilney* (holo: MEL 2369577; iso: CANB, K, NSW, PERTH, S).

Differs from *O. tenuifolia* in the glabrous leaves and stems, leaves without a recurved margin *in vivo*, capitula with white ray florets, and conspicuously shorter pappus bristles which are not or barely longer than the ripe cypsela.

Erect shrub to c. 3.5 m high; branchlets glabrous, viscid from a copious exudate, slightly ridged from decurrencies extending from leaf midrib and margins. Leaves alternate, sessile, linear, 11–22 mm long, 0.8–1.5 mm wide, acute, glabrous except for a few very fine, simple eglandular hairs on margins and abaxial midrib when young, but these soon caducous; lamina slightly discolorous, paler beneath; margin entire, plane *in vivo*, but appearing thickened or recurved on drying. Capitula 18–25 mm diam., solitary, terminal or subterminal on bracteate peduncles 8–25 mm long, lower bracts resembling leaves, upper bracts grading to those of the involucre; involucre ±conical, 5–7 mm long; bracts irregularly 3–4-seriate, graduating, the outermost c. 2 mm long, the innermost c. 5 mm long, all subulate, c. 1 mm wide, glabrous, viscid with sessile glands. Receptacle with fine erect ridges between florets. Ray florets 10–16, white, ligules 9–12 mm long; disc florets about twice as many as ray florets, yellow. Cypsela ±cylindrical, c. 2.5–3 mm long, with 5 or 6 prominent pale ribs at maturity, sericeous; pappus bristles scabrous, the longest equal to, or slightly longer than body of cypsela, to 3 mm long, pale or slightly rufescent. Flowers December–May (5 records). (Figs 1–3).

***Specimens examined:*** (all from type locality) 16.xii.1972, *K.C. Rogers s.n.* (MEL); 17.v.1975, *J.H. Willis s.n.* (MEL, ?NSW); *A.C. Beauglehole 41739* (LTB, MEL); *J. Turner 1077* (MEL).

***Distribution and habitat:*** *Olearia curticoma* occurs in dry open forest dominated by *Eucalyptus sieberi* L.A.S.Johnson with other common components being *Cassinia longifolia* R.Br, *Dodonaea viscosa* subsp.

**Figure 1.** Flowering stem of *Olearia curticoma* (photograph J.Eichler)

*spatulata* (Sm.) J.G.West, *Acacia terminalis* (Salisb.) J.F.Macbr., *Stypandra glauca* R.Br., *Gahnia radula* (R.Br.) Benth., *Lepidosperma urophorum* N.A.Wakef., *Sannantha pluriflora* (F.Muell.) Peter G.Wilson and *Pomax umbellata* (Gaertn.) Sol. ex A.Rich. Soils are shallow and sandy or gravelly, derived from Pleistocene alluvium overlying upper Devonian–lower Carboniferous sandstones.

This species appears to be confined to a single population above Billygoat Bend on the Mitchell River. The general vicinity is regarded as well-explored but no further populations have been detected (R. Bilney, pers. comm.). The high, exposed aspect of this site immediately above a substantial cliff line adjacent to the Mitchell River appears to be unique in the area, suggesting that *O. curticoma* may indeed be a very restricted habitat specialist.

***Conservation status:*** Applying IUCN criteria (IUCN 2012), *Olearia curticoma* is assessed as Critically Endangered (CR) on the basis of its occurrence at a single site, even though there are no immediate severe threats to the species. There is evidence of some plants being subjected to stem damage by the introduced Asian deer, Sambar (*Rusa unicolor* (Kerr,1972)). This damage should be monitored over time to ensure that the population as a whole is not threatened by it as has occurred with the rainforest shrub *Achronychia oblongifolia* (Hook.) Heynh. (Rutaceae) in the same general area (Bilney 2013), and *Nematolepis wilsonii* (N.G.Walsh & Albr.) Paul G.Wilson in south-central Victoria (Bennett & Coulson 2011).

***Notes:*** *Olearia curticoma* is probably closely related to *O. tenuifolia*, differing primarily in the glabrous stems and shorter pappus bristles. Ray florets are white in *O. curticoma* but mauve or pink in *O. tenuifolia*. Plants are generally taller (to 3.5 m high) and less spreading than *O. tenuifolia* (to 2 m high). The very sticky exudates of these two species have distinctly different odours. In *O. curticoma* the smell resembles that of Neatsfoot Oil and related leather-conditioning products, whereas in *O. tenuifolia* the smell is described in herbarium collections as 'sweet', 'fruity' or 'like bubble-gum'. While in herbarium specimens, the leaves of *O. curticoma* appear to have recurved or thickened margins, the margins of fresh leaves are at the same level as the midrib and intervening tissue. The latter shrinks on drying, creating the effect of a raised margin. By contrast, the leaves of *O. tenuifolia* have distinctly recurved margins, even in the fresh state. Probably more closely related to *O. curticoma* is *O. passerinoides* subsp. *glutescens* (Sonder) D.Cooke, which shares leaf morphology, similarly viscid and odorous stems and leaves, and broadly similar capitula. Major differences of *O. passerinoides* subsp. *glutescens* include the (usually) smaller leaves, slightly smaller capitula that are usually borne in corymbs, less acute involucral bracts that have minutely fimbriate margins, and shorter (to 2 mm long) cypselas with pappus bristles that are at least twice as long as the cypsela body. This taxon occurs in south-eastern South Australia and has been recently recorded from near Bendigo in Victoria. It inhabits mallee and dry woodland communities usually on infertile soils.

**Figure 2.** Plant *of Olearia curticama in situ* (photograph J.Turner)

**Figure 3.** Cypsela *of Olearia curticama* (from *Walsh 7183*)

The short pappus and relatively bulky cypselas of *O. curticoma* undoubtedly reduce the potential for wind dispersal and may partly explain the species' restricted distribution. Its response to fire is not known, but the sole population appears to be composed of relatively uniformly aged individuals, suggesting that plants are killed by fire and that the seed may require fire (or smoke) to trigger germination. Germination trials will be undertaken by the Victorian Conservation Seedbank at the Royal Botanic Gardens Melbourne.

The earliest collection of this species at MEL was made in 1972, surprisingly late in the botanical exploration of the state, from a site that has long been readily accessible by foot or vehicle. It was not recorded by Willis (1973), but a 1975 collection by him (cited above) bears the annotation '*O. rupicola sp. nov.*' That name however was never published. Beauglehole (1980) treated the species as '*Olearia* sp. aff. *glutinosa*'. *Olearia glutinosa* (Lindl.) Benth. is a compact, coastal species differing from *O. curticoma* in having corymbose inflorescences, capitula with shorter ligules to the ray florets and cypselas with longer pappus bristles. Following Nicholas Lander's determinations of these and other specimens at MEL as *O. tenuifolia* in 1986, that name has, until now, been accepted for the Billygoat Bend population.

## Acknowledgements

Thanks to Rohan Bilney, Christine Richards and Jan Walsh for assistance with field work, John Eichler for Fig. 1, James Turner for Fig. 2 and additional information on the population, Austin Brown for assistance with Fig. 3, Nicolas Fumeaux (G) and Nicholas Hind (K) for checking type material in their institutions.

## References

Beauglehole, A.C. (1980). *Victorian vosculor plont checklists*. Western Victorian Field Naturalists Clubs Association: Portland.

Bennett, A. and Coulson, G. (2011). The impacts of Sambar '*Cervus unicolor*' on the threatened Shiny Nematolepis '*Nemotolepis wilsonii*'. *Pocific Conservotion Biology* **16**: 251–260.

Bentham, G. (1867, as 1866). *Floro Austroliensis*, vol. 3. *Myrtoceoe to Compositoe*. Reeve & Co.: London.

Bilney, R.J. (2013). Antler rubbing of Yellow-wood by Sambar in East Gippsland, Victoria. *Victorion Noturolist* **130**: 68–74.

CHAH (The Council of Heads of Australasian Herbaria) (2013). *Austrolio's Virtuol Herborium*. Accessed 30 July 2013. <http://avh.chah.org.au>.

IUCN (International Union for the Conservation of Nature) (2012). *IUCN Red List Cotegories ond Criterio*, version 3.1, 2nd edn. Accessed July 29, 2013. <http://jr.iucnredlist.org/documents/redlist_cats_crit_en.pdf >.

Lander, N.S. (1992). '*Oleorio*', in G.J. Harden (ed.), *Floro of New South Woles* **3**: 185–197. University of New South Wales Press: Kensington.

Royal Botanic Gardens and Domain Trust (2013). *PlontNET – The Plont Informotion Network System of The Royol Botonic Gordens ond Domoin Trust, Sydney, Austrolio* (version 2). Accessed July 26, 2013. <http://plantnet.rbgsyd.nsw.gov.au>.

Walsh, N.G. and Lander, N.S. (1999). '*Oleorio*', in N.G. Walsh and T.J. Entwisle (eds), *Floro of Victoria* **4**: 886–912. Inkata Press: Melbourne.

Willis, J.H. (1973). *A handbook to the vosculor plonts of Victorio*, vol. 2, Dicotyledons. Melbourne University Press: Carlton.

# The weed that was not: *Picris hieracioides* (Asteraceae) in Australia

**Linden Gillbank**

School of Historical and Philosophical Studies, The University of Melbourne, Victoria 3010, Australia

## Introduction

Ferdinand von Mueller included *Picris hieracioides* L. in his list of plants 'immigrated and naturalized in Victoria' (Mueller 1888). Before this, botanists considered *P. hieracioides* indigenous to Australia; and botanists after Mueller recorded *P. hieracioides* across Australia as a naturalised alien.

This study of the birth, long life and death of the idea that *P. hieracioides* was the sole taxonomic identity of *Picris* L. in Australia is based on an investigation of collections and published records, with a focus on Victoria.

## Early *Picris* collections

Australian specimens of *Picris* were first collected during voyages of exploration. In the late 18th and early 19th century, substantial plant collections were made during British and French naval expeditions that focussed on science as well as exploration of the Pacific. Joseph Banks and Daniel Solander collected *Picris* in 1770 during James Cook's voyage as did Jacques-Julien Houtou de Labillardière in 1792–93 during Antoine-Raymond-Joseph Bruny d'Entrecasteaux's voyage. And *Picris* was collected during the subsequent voyages of Matthew Flinders and Nicolas Baudin.

Later *Picris* collections were made under diverse circumstances. British naval expeditions continued to yield specimens. Ship's surgeon Joseph Dalton Hooker collected during James Clark Ross's 1839–43 Antarctic expedition to map terrestrial magnetism (Endersby 2008) and expedition naturalist John MacGillivray collected during Owen Stanley's 1847 hydrographic survey of Moreton Bay (Goodman 2005). *Picris* was also collected during surveyor-general Thomas Mitchell's 1836 expedition into the interior of the Colony of New South Wales (Lindley 1838). Other visitors and residents also contributed *Picris* collections. Sent by Banks to collect for the Royal Gardens at Kew, Alan Cunningham joined sea and land expeditions before exploring north of Bathurst in 1822 (Curry et al.

## Abstract

*Picris hieracioides* L. has a long Australian history. In the first published record of *Picris* L. in Australia, Robert Brown considered *P. hieracioides* indigenous to Europe and Australia. Even after the establishment of species from Australian material, Joseph Hooker perpetuated the idea that the variable and widely distributed *P. hieracioides* was the sole taxonomic identity of *Picris* in Australia. George Bentham agreed, but suggested that *P. hieracioides* may not be indigenous throughout Australia. After initially identifying *Picris* specimens as other Australian species, Ferdinand Mueller identified specimens as *P. hieracioides* and declared it naturalised. *Picris hieracioides* (naturalised) represented *Picris* in state and regional floras until Walter Lack and Sebastian Holzapfel reinstated old names and established new taxa in the late 20th century.

***Key words:*** Australian indigenous plants, George Bentham, Robert Brown, Sebastian Holzapfel, Joseph Hooker, Ferdinand von Mueller

*Muelleria* 32:39–51 (2014)

2002). Before and after his 1841 appointment as first director of the Royal Botanic Gardens at Kew, William Jackson Hooker received specimens from Ronald Campbell Gunn in Van Diemen's Land (where Gunn assisted William Hooker's son Joseph and received specimens from the Port Phillip District), and James Drummond in the western Australian Swan River Colony where, during 1838–41, Johann Ludwig Preiss also collected (Holzapfel 1994). From Wando Vale pastoral station (near present-day Casterton, Victoria), John George Robertson also contributed *Picris* collections that eventually reached British and French museums of natural history and the Gardens at Kew (Holzapfel 1994).

These early collections include the first Victorian specimens of Victoria's three *Picris* species before the establishment of both the Colony and those species.

## *Picris hieracioides* indigenous to Australia as well as Europe

Robert Brown provided the first published record of *Picris* in Australia. He probably examined Banks' and Labillardière's collections, as well as his own made in 1801–05 during and after Flinders' circumnavigation of Terra Australis (Holzapfel 1994). Brown established many new species from his Australian collections. But he saw his Australian *Picris* collections as sufficiently similar to the European *P. hieracioides* to identify them under that name, one of a suite of species he considered native to both Europe and Terra Australis (Brown 1814). Since most, perhaps all, of the Australian specimens that Brown examined were collected at localities unsullied by Europeans and their invasive species, *P. hieracioides sensu* Brown was almost certainly indigenous (or a pre-European introduction).

Joseph Hooker agreed that *P. hieracioides* was indigenous to Australia. In documenting *Picris* that he collected from New Zealand and Van Diemen's Land during Ross's Antarctic expedition and later in the Himalayas, Hooker could examine other *Picris* specimens collected during the first half of the 19th century. At the time, British (predominantly descriptive) botany was languishing behind more philosophical (as in natural philosophy) sciences, and Kew Gardens was seeking scientific and imperial status. Hooker sought to raise botany to a philosophical science with theories and explanations and to show that he was a philosophical botanist. As Stevens (1997) and Endersby (2008) have explained, broadly delimited species were crucial for Hooker's ideas. Such variable and widely distributed species would allow him to develop theories and suggest explanations for their disjunct distributions and thereby contribute to the young science of phytogeography. The perpetuation at Kew of broadly delimited species would keep taxonomic power from colonial and continental species-mongers. And smaller numbers of species would allow the speedier completion of colonial floras, essential for documenting colonial resources for the British imperial enterprise.

In the introductory essay in his New Zealand flora, Hooker (1853) discussed his views that species 'vary more than is generally admitted' and 'are much more widely distributed than is usually supposed'. Hooker (1853) warned of the proliferation of confusion and synonymy caused by botanists who, without comparing specimens from different environments, exaggerated minor characters. He was concerned that local botanists and narrow specialists created species rather than acknowledging environment-induced variation within broadly delimited species. His own examination of numerous specimens across a wide geographic range showed that

> *differences of habit, colour, hairiness, and outline of leaves, and minute characters drawn from other organs than those of reproduction, are generally fallacious as specific marks, being attributable to external causes, and easily obliterated under cultivation.* (Hooker 1853: xiii)

In his New Zealand flora, Hooker (1853) recorded the European *P. hieracioides* which also inhabited 'various parts of India, Australia, Tasmania and New Zealand,' and varied 'considerably, especially in hairiness, in all places, being sometimes nearly smooth, at others very hispid with stiff, spreading bristles'. Hooker (1853) would not distinguish the New Zealand plant from 'the common European plant', which he had 'also gathered in the Himalaya Mountains at 9000 feet elevation'. Considering a New Zealand species 'only a rather more slender and smooth state of the plant', he reduced it to a variety. *Picris hieracioides* was clearly a variable and widely dispersed species that suited Hooker's ideas.

Hooker recorded *P. hieracioides* in the third fascicle of his *Flora Tasmaniae*, published in October 1856 [the whole volume appeared later (Hooker 1860)]. By this time, he was assistant director of the Gardens at Kew and

botanists outside Kew had established four *Picris* species from Australian material: *P. ongustifolio* DC., *P. osperrimo* Lindl., *P. borbororum* Lindl and *P. squorrosa* Steetz. Hooker (1860) repraduced his New Zealand entry for *P. hieraciaides* and, presumably considering these other Australian species the result of unnecessary species-splitting, synonymised them under *P. hieracioides*.

## The establishment of endemic Australian species

Augustin-Pyramus de Candalle had seen species differently. Having divided the world into botanical regions with indigenaus plants peculiar ta each, Candolle saw endemism as common and widely dispersed cosmopolitan species as rare (Nelson 1978). Australia was one botanical region; Europe had four. So it is not surprising that Candolle did not see *Picris hierocioides* in Australian specimens. Instead, Candolle (1838) used coastal and inland collections (by J.B.L.T. Leschenault de la Tour and Antoine Guichenault an the southern coast of New Holland during Baudin's 1800–04 expedition and by Alan Cunningham near Bathurst in 1822) to name and describe *P. ongustifolia*.

John Lindley, professor of botany at University College, London, and vice secretary of the Horticultural Society, established two *Picris* species from Australian material. Using 'specimens from my invaluable correspondent, Ronald Gunn, Esq.' in Van Diemen's Land (Herbarium Royal Botanic Gardens, Kew, K000796462), Lindley (1838) named and described *P. osperrima*, noting that it 'is like *P. hierocioides* in appearance, but has longer narrower leaves, larger flower-heads, and an exceedingly raugh surface'.[1]

Lindley (1838) also used material from a plant 'raised in the garden of the Horticultural Society from seeds procured by Major Mitchell in one of his expeditions into the interior of New Holland' to name and describe *P. barbororum*. The seeds were found in an Aboriginal food bag near Victoria's present-day Kerang in June 1836 (Halzapfel 1994). Lindley (1838) explained that *P. borbororum*

> *forms ane af the very few Cicharaceaus plants knawn in New Holland, and, alang with two other species af the same genus, one af which is noticed by M. De Candalle, gives ta Australia another af the very few features which that cauntry passesses in common with Eurape. It is an erect, branched plant, nearly 3 feet high, and is what is mentianed by Majar Mitchell at p. 148 af the secand valume of his work an Australia, as hoving been faund by him par-bailed, as a part af the faod af the natives. It seems ta be anly an annual, and is abaut as fit far faod as a saw-thistle.*

Hamburg botanist Joachim Steetz established another species. Particularly interested in the Asteraceae, Steetz used Preiss's sauth-western Australian collections (Short & Sinkora 1988) to describe *P. squorrasa* in Lehmann's *Plontae Preissionae* (Steetz 1845). In the Swan River Colony, James Drummond reported 'a strong-grawing species of Picris, indigenous here, the large heads of which, full of seeds, are a favourite food of the horses' (Drummond 1843). Drummond's collectian (K000796459) shares a Kew herbarium sheet (Fig. 1) with Port Phillip *P. squorroso* (K000796458) sent by Gunn in 1842 (Ducker 1991) and was later used to establish another large-headed species, *P. wogenitzii* Lack.

## *Picris* according to Ferdinand Mueller

Without access to European herbaria rich in Australian collectians, the Colony of Victoria's government botanist, Dr (later Baron Ferdinand von) Mueller, had to rely on the sometimes inadequate descriptions in published protologues to guide his identification of Australian specimens. He brought to Australia a German translation of Brown's works (Maroske 2012), Candolle's *Prodromus* and Lehmann's *Plontae Preissionoe* (Maroske & Cohn 1992) and, in Melbourne, sought to keep up with taxonomic develapments by buying baoks and journals. He would have read Brown's Australian *Picris hierocioides* record and protologues for other Australian *Picris* species; and he may well have been familiar with the protologue, herbarium specimens and living plants of *P. hieracioides* in Europe. In the 1850s he had *P. hierocioides* cultivated in the Melbourne Botanic Garden (Mueller 1858). In the 1840s and 1850s, even after beginning his concerted Kew correspondence, Mueller did not identify Australian collections as *P. hierocioides*.

Mueller identified his 1847–51 South Australian collections as *P. squorraso* and *P. ongustifolio* (Appendix 1) and listed *P. ongustifalio* in his first systematic index

1. *Picris asperrima* is a synonym of *P. angustifolia* subsp. *angustifolia*.

of Victorian plants (Mueller 1853). There are no dated *Picris* collections in that period (RBG Melbourne 2012), but Mueller identified as *P. angustifolia* some undated specimens collected in the late 1850s (Appendix 1). They include John Dallachy's Murray River collection in 1858 (Mueller 1858; 1860) and Charles Stuart's near Moreton Bay, perhaps in the summer of 1858–59 when Stuart, 'our collector at Moreton Bay', sent Mueller 'a supply of dried specimens of plants' (Home et al. 1998: 364). And Mueller identified (wrongly) Stuart's 1855 Tasmanian collection as *P. barbarorum* (Appendix 1).

**Figure 1.** Two *Picris* collections at Kew: Port Phillip, Gunn (two left-hand pieces), and Swan River, Drummond (two right-hand pieces), both referred to by Bentham (1867) under *P. hierocioides* var. *squorrasa*, currently identified as *P. squorrosa* and *P. wogenitzii* respectively. The Drummond collection is the type of *P. wogenitzii* Lack. The Trustees of the Royal Botanic Gardens, Kew.

But Dallachy's 1858 Murray collection is *P. squorrasa*. Mueller left unidentified two other *P. squarrasa* collections and identified Dallachy's *P. squarrasa* collection near the lower Wimmera in the spring of 1860 (Mueller 1861) only as *Picris* (Appendix 1). Mueller probably identified these collections before he could examine Preiss's *P. squarraso* specimens after Steetz's herbarium reached Melbourne in December 1863 (Short & Sinkora 1988).

By then Mueller had changed his taxonomic mind about *Picris*. He had earlier anticipated that Hooker's New Zealand flora would

> *be o guide ta direct roods ond correct directians through the lobyrinth of systemotic[s]. It will apen many of aur best botanists, and directly to the continentol ones, their eyes to see whot ore the reol limits of species.* (Home et al. 1998: 209)

With his own 'opportunity to study the laws of variation of species more carefully in the field & under the most varied circumstances, than any other or at least than most Botanists', Mueller, ever the believer in the fixity of species, acknowledged in 1862 that '*permanent & unalterable*' species 'are subject to vastly more variations than we were accustomed to suppose!' (Home et al. 2002: 168). Perhaps he had *P. hieraciaides* in mind. By then he was identifying Australian collections as *P. hieraciaides*.

Mueller had received Hooker's *P. hieraciaides* record in the third fascicle of *Flara Tasmaniae* in 1857 – between January, when he had the first two fascicles, and September, when he was 'longing very much' for the fourth (Home et al. 1998: 261, 321, 324). Australian specimens that Mueller identified as *P. hieracioides* include undated collections by Hermann Beckler, Augustus Oldfield, Frederick Waterhouse and Anthelme Thozet (Appendix 1) which appear to have been collected in about 1860 (Mueller 1860, 1861, 1862; Home et al. 1998: 443; Home et al. 2002: 96, 134, 135). Unfortunately no extant correspondence or reports provide proof that Hooker's *Picris* decision convinced Mueller to identify specimens as *P. hieraciaides*. But the timing of this and Mueller's acceptance of very variable species makes it likely.

Mueller despatched to Kew specimens labelled *P. hieracioides* along with Preiss's and other earlier specimens identified as other Australian species.

## Bentham's Flora australiensis – *Picris hieracioides* and *P. hieracioides* var. *squarrosa*

Far from the landscapes in which Australian plants have evolved and flourished and from the Australian herbarium that Mueller was developing in Melbourne, George Bentham was preparing an imperial flora of Australia. Deprived of his long-cherished ambition to document the Australian flora, Mueller agreed to assist Bentham and sent on loan taxonomic batches of Australian collections from Victoria's growing government herbarium (Mueller 1862; Home et al. 2002: 21). They included three dozen *Picris* collections in time for Bentham's preparation of the Compositae section of volume three of his *Flara australiensis*. Mueller's blue labels for these collections are marked with the letter 'B', which is interpreted in MELISR (RBG Melbourne 2012) as 'Seen by Bentham' (Appendix 1).

Unlike Brown, Hooker and Mueller, Bentham had not seen *Picris* in the wild in Australia. This did not matter. At Kew, it was considered much more important to compare numerous herbarium specimens than rely on scattered field observations (Stevens 1997; Endersby 2008): only a substantial spread of specimens could reveal the full range of variations. Undistracted by field observations, Bentham could examine the *Picris* collections available to Hooker, Frederick Adamson's Melbourne collection and several other subsequent arrivals, and those sent by Mueller. In the third volume of his *Flara australiensis*, published in January 1867, Bentham (1867) cited *Picris* collections by Brown, Hooker, Preiss, MacGillivray, Drummond, Gunn, Cunningham and Adamson and by Mueller, Dallachy, Beckler, Stuart, Waterhouse and Oldfield. He did not cite specimens collected during French voyages or Mitchell's expedition (used by Candolle and Lindley).

Having earlier agreed with Hooker that species should be broadly delimited (Stevens 1997: 360), Bentham agreed that *P. hieracioides* was indigenous to Australia and was the only Australian species. Bentham (1867) considered *Picris*: 'A genus containing but few species, natives of the temperate and subtropical regions of the northern hemisphere in the Old World, one of which is also the Australian one'. But Bentham queried two aspects of Hooker's *Picris* decision – the absolute

indigenous status of *P. hieracioides* and the synonymy of all other Australian species under it.

With the Preiss specimens that Steetz (1845) had used to describe *P. squarrosa* and Port Phillip specimens from Gunn labelled 'Picris squarrosa ?' (Fig. 1), Bentham (1867) decided that *P. squarrosa* deserved more than synonymy and made a new combination and status, *P. hieracioides* var. *squarrosa* (Steetz) Benth.: 'More hispid, with larger flower-heads and more numerous recurved outer involucral bracts'. Bentham (1867) cited Gunn's Port Phillip collection, South Australian collections by 'Mueller and others', and Western Australian collections by Drummond, Preiss, Oldfield and George Maxwell. Like Mueller, Bentham (1867) had trouble identifying *P. squarrosa* consistently and cited Beckler's Burke and Wills expedition collection and Dallachy's Wimmera collection as *P. hieracioides*.

Bentham also suggested that *Picris* may not be indigenous throughout Australia. Observing that *P. hieracioides* 'has much spread with cultivation', Bentham (1867) opined: 'It may therefore be an introduced plant in many of the Australian localities. In others however there is every probability of its being truly indigenous.' Gunn's Van Diemen's Land collection (K000796461) was annotated 'Introduced'.

## Mueller, Maiden and Mitchell – *Picris hieracioides* native or naturalised?

Agreeing with Hooker and Bentham that Australia had a single species of *Picris* (until *P. echioides* L. was recorded), Mueller continued to write *P. hieracioides* on specimen labels and in publications. But, for reasons unavailable in extant correspondence and reports, Mueller did not agree that *P. hieracioides* might be indigenous. By the 1880s, he could examine more than twice as many *Picris* collections as he had sent Bentham (RBG Melbourne 2012), was well-aware of weeds in European-disturbed areas in South Australia and Victoria (Gillbank 2007) and, perhaps, had observed *Picris* colonising disturbed areas as later noted (e.g. by Murray & Brown 1992) (Neville Walsh pers. comm.). Convinced that *P. hieracioides* was, like *P. echioides*, a naturalised alien, Mueller (1888) listed both species in 'Plants, hitherto immigrated and naturalized in Victoria' in his *Key to the system of Victorian plants*, with no mention of *P. hieracioides* var. *squarrosa*. And Mueller included no *Picris* in his 1882 and 1889 *Census* of Australia's indigenous vascular plants.

Mueller identified as *P. hieracioides* an 1889 specimen labelled 'Senecio?' (MEL 0067728A, now identified as *P. angustifolia* subsp. *carolorum-henricorum* (Lack) S.Holzapfel). It was collected in the Blue Mountains (RBG Melbourne 2012) by a botanist who shared Mueller's interest in early Australian plant collections but who, unlike Mueller, considered *P. hieracioides* indigenous. The collector was the curator of Sydney's technological museum, Joseph Henry Maiden. Maiden (1889) included *P. hieracioides* in the food section of his book, *The useful native plants of Australia*, and quoted two paragraphs about its Aboriginal culinary use from Mitchell's 1836 expedition report.

Intriguingly, Mueller later mentioned *P. hieracioides* without indicating whether he considered it naturalised or native. Identifying South Australian collections in a letter to Jessie Hussey,[2] and discussing Sydney and Blue Mountains plants used by Aborigines in a letter to Robert Ethridge,[3] Mueller referred to *P. hieracioides* without any indication that it was any less indigenous than other indigenous species that he mentioned.

An article in *The Queenslander* of 21 May 1898 reminded readers that the thickened root of 'the Tao (Picris hieracioides) of Sir Thomas Mitchell' was 'roasted in the usual primitive fashion'. Maiden, now New South Wales government botanist and director of Sydney's botanic gardens, was still interested in indigenous plants with economic potential. He expanded his 1889 entry on *P. hieracioides* and, in January 1898, collected a specimen (NSW 129001, now identified as *P. angustifolia* subsp. *merxmuelleri* Lack & S.Holzapfel) on Mount Kosciuszko. In his series 'Native Food-plants', Maiden (1899) recorded that Mitchell had found roots of *P. hieracioides*, 'a small cichoraceous plant with a yellow flower, named Tão by the natives,' in food bags left behind by their fleeing owners. The omission of *P. hieracioides* from Mueller's *Census* prompted Maiden (1899) to ask:

2. Mueller to Jessie Hussey, 1893 and 1894. The Mueller Correspondence Project drew my attention to this letter, held at the State Library of South Australia, Adelaide, and gave me access to a transcription of it.

3. Mueller to Robert Etheridge, 14 December 1895, Australian Museum, Sydney; also courtesy of the Mueller Correspondence Project.

*[I]s it not in the highest degree unlikely thot our benighted oborigines of the interior, so early os the third [sic] decode of this century, would be found, when visited for the first time by o white mon, to hove the roots of on immigroted plant in doily culinory use?*

Despite the collection of *Picris* at pre-contact localities and its pre-contact consumption by indigenous Australians, Maiden's question did not stop botanists recording *Picris* across 20th century Australia as **P. hieraciaides*. [Here and below the asterisk indicates that the species was considered naturalised in the particular publication being discussed].

## *Picris* in Victoria according to Ewart and Willis

Professor Alfred Ewart was Victoria's government botanist during 1906–20 in the then recently named National Herbarium of Victoria, which, until 1912, was in the Department of Agriculture where weeds were a growing concern (Cohn 2005). Like Mueller, Ewart considered *Picris hieraciaides* naturalised not native. In *The weeds, paisan plants, and naturalized aliens of Victaria*, Ewart (1909b) reported that both *P. echiaides* 'The Ox Tongue' and *P. hieracioides* 'Sometimes termed the Hawkweed Picris' were 'likely to prove troublesome if neglected, but can be kept down by cultivation, and the prevention of seeding. They are not poisonous but useless or even objectionable in fodder'.

Ewart expressed no surprise that *P. hierociaides* was found thriving in a national park, albeit one whose landscapes had earlier been subjected to mining, grazing and logging. Reporting on the National Herbarium's 1908 botanical survey of Wilson's Promontory, Ewart (1909a) noted that *P. hierociaides* was one of the commonest and most widely spread weeds. Herbarium assistant James Audas collected a specimen (MEL 0649121A, now identified as *P. angustifalia* subsp. *angustifalia*) (RBG Melbourne 2012) and included **P. hierociaides* in his Wilson's Promontory species list (Ewart 1909a).

Work by Ewart and others led to the inclusion of *P. hieraciaides* in the weed list proclaimed under Australia's *Quarantine Act 1908* in July 1909 (Maiden 1920). Now *P. hieracioides*, as well as *P. echiaides*, was prohibited entry into Australia.

While *P. echiaides* was gazetted a noxious weed in various Victorian municipalities, *P. hieraciaides* was recorded in another remote region loved by field naturalists – Victoria's alps. Mueller had justified his 1854–55 summer botanical survey of this region to allow comparisons with Hooker's New Zealand and Tasmanian floras (Gillbank 1992), but he left no alpine *Picris* collections (RBG Melbourne 2012). However, several decades after *P. angustifalia* subsp. *merxmuelleri* was first collected in Victoria, in East Gippsland, Alfred Tadgell collected it in the alps – on Mount St Bernard in December 1913 (MEL 1527522A) and Mount Feathertop in the summer of 1921–22 (MEL 0067770A and 1527523A) (RBG Melbourne 2012). Tadgell (1922) added **P. hieracioides* to the Victorian Alps species list, and later recorded **P. hieraciaides* on Mount Bogong (Tadgell 1924).

Apparently unaware of Tadgell's *P. hierocioides* records, Ewart (1931) recorded in his *Flara of Victaria* that **P. hieraciaides*, Hawkweed Picris, was a 'bitter weed, native to Europe, Asia, and Africa, common in Victoria, and recorded as naturalized in 1876, and at Wilson's Promontory in 1909'. Was 1876 a misprinted 1867? That year Bentham (1867) suggested that *P. hieraciaides* might, in many Australian localities, be introduced. Ewart (1931) recorded Bentham's variety *squarrasa* 'a rough form with large heads and the achenes slightly beaked' without indicating whether it might be indigenous.

By the time that James Hamlyn Willis was preparing *A handbaok to plants in Victoria*, the late Alfred Tadgell's substantial herbarium had been donated to MEL (Morris 1949) and Willis could examine dozens of Victorian *Picris* collections among scores of Australian collections (RBG Melbourne 2012). Echoing Brown, Hooker, Bentham, Mueller and Ewart, Willis published records for and identified specimens as *P. hieraciaides*.

Some MEL collections are now identified as *P. angustifalia* subsp. *merxmuelleri* (Fig. 2). Willis collected this at Echo Flat, Lake Mountain, on 6 February 1943 (MEL 0067844A) (RBG Melbourne 2012) (although Willis (1948) recorded **P. hieracioides* beyond, not at, Lake Mountain in February 1943). *Picris* was not recorded during the Field Naturalists Club of Victoria camp-out at Lake Mountain in January 1948 (Willis 1948) but, after revisiting Lake Mountain the following January,

J. Ros Garnet recorded the conspicuous presence of 'Hawkweed Picris (introduced)' (Garnet 1949a) and added **P. hieracioides* to Willis's Lake Mountain species list (Garnet 1949b). Willis later collected specimens on Mounts Selwyn (MEL 0067845A), Tingaringy (MEL 0067846A) and Buffalo (MEL 0067843A) (RBG Melbourne 2012). Willis annotated his 1963 Buffalo collection 'Not uncommon in various parts of Mount Buffalo National Park', while T.B. Muir annotated his 1960 Mount Higginbotham collection (MEL 0067850A) 'An introduced plant' (RBG Melbourne 2012).

In his *Handbook*, Willis (1973) recorded **P. hieracioides* L., Hawkweed Picris, as 'frequent throughout alps and subalps of E. highlands, but rare and scattered in W.' and, with its 'more hispid stems and foliage, rather larger heads (to 15 mm. long) and more numerous, *very spreading* or *recurved* outer bracts', the variety *squarrosa* found 'on sandy banks of the Murray R. near Mildura' was 'probably indigenous'. Willis annotated his October 1967 collection near Mildura (MEL 0067859A, now identified as *P. squarrosa*) 'Perhaps indigenous' (RBG Melbourne 2012).

Meanwhile, because they were identified as **P. hieracioides*, MEL *Picris* collections were indexed for the Australian National University's Introduced Plants Project (RBG Melbourne 2012).

Australian *Picris* collections continued to be identified as **P. hieracioides* until European taxonomists reinstated old names and established new taxa.

## *Picris* revision by Lack and Holzapfel

At the Botanischer Garten und Botanisches Museum in Berlin in 1979, Dr H. Walter Lack undertook a preliminary investigation of Australian collections of *Picris* and recognised the presence of several new species and the general absence of the one to which they were usually referred, *P. hieracioides* (Lack 1979,

**Figure 2.** *Picris angustifolia* subsp. *merxmuelleri* in Kosciuszko National Park. Photo: Jackie Miles.

1987).[4] Under Lack's supervision, Sebastian Holzapfel undertook a complete revision of the genus in Australia and increased the number of indigenous species to ten, nine being endemic and one occurring also in New Zealand (Holzapfel & Lack 1993; Holzapfel 1994). This was in time for Jeff Jeanes to include *P. angustifolia* subsp. *angustifolia*, *P. angustifolia* subsp. *merxmuelleri*, *P. barbarorum* (possibly extinct) and *P. squarrosa* in the *Flora of Victoria* (Jeanes 1999).

Thus, two centuries after *Picris* was first collected in Australia, Lack and Holzapfel quashed the long-held belief that it was naturalised and confirmed the earlier understanding of Robert Brown, Joseph Hooker and, more tentatively, George Bentham, that *Picris* is indigenous to Australia; but not as *P. hieracioides*.

## Summary

The idea of *Picris hieracioides* in Australia began in the mind of the much-travelled collector-taxonomist, Robert Brown. Among Australian collections of *Picris* Brown saw only *P. hieracioides*, which he considered indigenous to Australia as well as Europe.

The idea of *P. hieracioides* as the sole taxonomic identity of *Picris* in Australia was strengthened by Joseph Hooker, another well-travelled collector-taxonomist and authority on Australian plants. But Hooker saw more than its taxonomic identity. In the variable and widely dispersed *P. hieracioides* Hooker saw opportunities for taxonomic power and prestige. Its disjunct distribution demanded explanations that could elevate the status of botany and Hooker above purely descriptive pursuits. And the perpetuation of such broadly circumscribed species in colonial floras would help keep taxonomic power from colonial and continental species-splitters, such as the authors of the Australian species that Hooker synonymised under *P. hieracioides*.

Victoria's government botanist, Ferdinand von Mueller, initially identified collections as Australian species. However, possibly convinced by Hooker's *Picris* decision, Mueller changed from follower of non-Kew *Picris*-splitters to adherent of the Kew *Picris* line and began identifying Australian collections as *P. hieracioides*.

In his *Flora australiensis*, Bentham echoed Hooker. But he tweaked two aspects of *P. hieracioides sensu* Hooker. Aware that *P. hieracioides* was spreading with agriculture, Bentham questioned its absolute indigenous status in Australia; and, from one of the Australian species, he established a variety.

Mueller ignored the variety and, with field observations and access to an increasing number and geographic range of *Picris* collections, he went further than Bentham and declared *P. hieracioides* a naturalised alien.

*Picris* in Australia was now doomed to alien status. Bentham's *Flora australiensis* and Mueller's Victorian *Key* and Australian *Census* cast long taxonomic shadows. **Picris hieracioides* appeared in floras and species lists across 20th century Australia, with *P. hieracioides* var. *squarrosa* sometimes considered the sole indigenous entity. In the absence of critical taxonomic examination, the idea of **P. hieracioides* as the taxonomic identity of *Picris* across Australia remained unchallenged.

The idea died as it began – in taxonomic minds examining *Picris* collections. Death was by critical revision of *Picris* in Australia. Lack and Holzapfel reinstated old names and established new taxa. At last *Picris* plants could raise their yellow heads in Australia without being identified as naturalised aliens.

## Acknowledgements

I acknowledge and thank Pina Milne at the Royal Botanic Gardens Melbourne for providing access to the MELISR collections database. I am indebted to Alison Vaughan for extracting innumerable initial determinations and other original collecting information on MEL collections and Neville Walsh for taxonomic and nomenclatural information. I thank Clare Herscovitch for National Herbarium of New South Wales collection information, Nicholas Hind for clarifying details about Kew collections and Rod Home for access to unpublished Mueller correspondence. I also appreciate Jill Thurlow's clarification of bibliographic puzzles and the perceptive comments of Tom May and two referees.

4. *Picris echioides* was transferred to *Helminthotheca* in 1973.

## References


Bentham, G. (1867). 'Picris', in *Floro oustroliensis* **3**, 677–678. Lovell Reeve & Co: London.

Brown, R. (1814). 'General remarks, geographical and systematical, on the botany of Terra Australis', in M. Flinders, *Voyage to Terro Austrolis*. G. and W. Nicol: London.

Candolle, A.P. de (1838). 'Picris angustifolia', in *Prodromus systemotis noturolis regni vegetobilis* **7**, 130.

Cohn, H.M. (2005). Watch Dog over the Herbarium: Alfred Ewart, Victorian Government Botanist 1906–1921. *Historicol Records of Austrolion Science* **16**, 139–167.

Curry, S., Maslin, B. and Maslin, J. (2002). *Alon Cunninghom: Austrolion collecting localities.* Flora of Australia Supplementary Series No. 13. Australian Biological Resources Study: Canberra.

Drummond, J. (1843). On the botany of Western Australia. *Inquirer* (Perth) 8 March.

Ducker, S.C. (1991). 'Ronald Campbell Gunn's visit to Port Phillip in 1836', in M.R. Banks, S.J. Smith, A.E. Orchard, and G. Kantvilas (eds), *Aspects of Tosmonion botony: A tribute to Winifred Curtis*, pp. 201–212. Royal Society of Tasmania: Hobart.

Endersby, J. (2008). *Imperiol Noture: Joseph Hooker ond the practices of Victorion science.* The University of Chicago Press: Chicago and London.

Ewart, A.J. (1909a). Biological survey of Wilson's Promontory. *The Victorion Noturolist* **25**, 142–151.

Ewart, A.J. (1909b). *The weeds, poison plonts, ond naturolized oliens of Victaria.* Government Printer: Melbourne.

Ewart, A.J. (1931). *Floro of Victorio.* Government Printer for the University Press: Melbaurne.

Garnet, J.R. (1949a). Lake Mountain revisited. *The Victorion Naturalist* 66, 152–156.

Garnet, J.R. (1949b). Additions to the recorded flora of Lake Mountain (January, 1949). *The Victorion Naturalist* **66**, 157–159.

Gillbank, L. (1992). Alpine botanical expeditions of Ferdinand Mueller. *Muelleria* **7**, 473–489.

Gillbank, L. (2007). Of weeds and other introduced species: Ferdinand Mueller and plant and animal acclimatisation in colonial Victoria. *The Victarion Noturolist* **124**, 69–78.

Goodman, J. (2005). *The Rattlesnake: A vayoge of discavery to the Coral Seo.* Faber and Faber: London.

Holzapfel, S. (1994). A revision of the genus *Picris* (Asteroceoe, Loctuceoe) s.l. in Australia. *Willdenowio* **24**, 97–218.

Holzapfel, S. and Lack, H.W. (1993). New species of *Picris* (*Asteraceae*, *Lactuceoe*) from Australia. *Willdenowio* **23**, 181–191.

Home, R.W., Lucas, A.M., Maraske, S., Sinkara, D.M. and Voigt, J.H. (1998). *Regardfully yours: Selected correspondence of Ferdinand von Mueller* **1**. Peter Lang: Bern.

Home, R.W., Lucas, A.M., Maroske, S., Sinkora, D.M. and Voigt, J.H. (2002). *Regordfully yours: Selected carrespondence of Ferdinand von Mueller* **2**. Peter Lang: Bern.

Hooker, J.D. (1853). *The botony of the Antorctic vayage of H.M. discovery ships* Erebus ond Terror in the yeors *1839–1843* **2**, *Flaro Novoe-Zelondioe* **1**, *Flowering plants*. Lovell Reeve: London.

Hooker, J.D. (1860). *The botony of the Antorctic voyoge of H.M. discavery ships* Erebus ond Terror *in the yeors 1839–1843* **3**, *Flora Tosmonioe* **1**, *Dicotyledones*. Lavell Reeve: London.

Jeanes, J.A. (1999). *'Picris'*, in N.G. Walsh and T.J. Entwisle (eds), *Flaro of Victaria* **4**, 703–706. Inkata Press: Melbourne.

Lack, H.W. (1979). New species of *Picris* (*Asteraceoe*, *Loctuceae*) from Australia. *Phytalagio* **42**, 209–214.

Lack, H.W. (1987). *Picris wagenitzii* (Asteraceae, Lactuceae), eine neue Art aus West-Australien. *Botanische Jahrbücher für Systematik, Pflonzengeschichte und Pflonzengeagrophie* **108**, 187–93.

Lindley, J. (1838). Picris barbarorum; Picris asperrima. *Edword's Botonical Register* **24**, 58.

Maiden, J.H. (1889). *The useful notive plants of Austrolia, (including Tosmonio).* Turner and Henderson: Sydney.

Maiden, J.H. (1899). Native food-plants. *The ogriculturol gazette of New Sauth Woles* **10**, 618–629.

Maiden, J.H. (1920). *The weeds of New Sauth Woles.* Government Printer: Sydney.

Maroske, S. (2012). Australian and Indian Plants: Making connexions in nineteenth-century botany. *Historicol Records of Austrolion Science* **23**, 107–119.

Maroske, S. and Cohn, H.M. (1992). 'Such ingenious birds': Ferdinand Mueller and William Swainson in Victoria. *Muellerio* **7**, 529–553.

Morris, P.F. (1949). The late Alfred James Tadgell. *The Victarian Naturolist* **66**, 135.

Mueller, F. (1853). 'First general report of the government botanist on the vegetation of the colony', in *Victoria – Porliamentory Papers – Vates ond Proceedings of the Legislative Council 1853* **1** (A. No. 26a & b). Government Printer: Melbourne.

Mueller, F. (1858). 'Annual report of the government botanist and director of the botanic garden', in *Victario – Parliamentory Popers – Vates and Proceedings of the Legislative Assembly 1858–9* **2** (No. 17). Government Printer: Melbaurne.

Mueller, F. (1860). 'Annual report of the government botanist and director of the botanical and zoological garden', in *Victorio – Porliomentary Popers – Votes ond Proceedings of the Legislative Assembly 1859–60* **4** (No. 37). Government Printer: Melbaurne.

Mueller, F. (1861). 'Annual report of the government botanist and director of the botanic and zoologic garden', in *Victario – Porliamentary Papers – Vates and Proceedings of the Legislative Assembly 1860–1* **3** (No. 19). Government Printer: Melbaurne.

Mueller, F. (1862). 'Annual report of the government botanist and director of the botanic garden', in *Victario – Porliomentory Papers – Votes ond Proceedings of the Legislative Assembly 1861–2* **3** (No. 105). Government Printer: Melbaurne.

Mueller, F. van (1888). *Key to the system of Victarian plants.* Government Printer: Melbaurne.

Murray, L. and Brown, E.A. (1992). *'Picris'*, in G.J. Harden (ed.), *Flaro of New Sauth Woles* **4**, 334, 345. UNSW Press: Sydney.

Nelson, G. (1978). From Candolle to Croizat: Comments on the history of biogeography. *Journal of the History of Biology* **11**, 269–305.

RBG Melbourne (2012). MELISR database, Royal Botanic Gardens Melbourne. Accessed 20 January 2012.

Short, P.S. and Sinkora, D.M. (1988). The botanist Joachim Steetz (1804–1862). *Muelleria* **6**, 449–494.

Steetz, J. (1845). 'Picris squarrosa', in J.G.C. Lehmann (ed.), *Plontoe Preissianae* **1**, 488.

Stevens, P.F. (1997). J.D. Hooker, George Bentham, Asa Gray and Ferdinand Mueller on species limits in theory and practice: A mid-nineteenth-century debate and its repercussions. *Historicol Records of Austrolion Science* **11**, 345–370.

Tadgell, A.J. (1922). A contribution to 'The Flora of the Victorian Alps'. *The Victorion Noturolist* **38**, 105–118.

Tadgell, A.J. (1924). Mount Bogong and its flora. *The Victorion Noturalist* **41**, 56–80.

*The Queenslonder*, 21 May 1898, p. 988.

Willis, J.H. (1948). Vascular flora of the Lake Mountain Alps. *The Victorion Noturalist* **65,** 14–17.

Willis, J.H. (1973). *A hondbook to plonts in Victoria* **2**. Melbourne University Press: Carlton.

## Appendix 1. *Picris* collections 'Seen by Bentham' (RBG Melbourne 2012)

| MEL number | Collector and number | Collecting date | Current determination | Mueller's determination | State | Locality |
|---|---|---|---|---|---|---|
| 0067721A | *Preiss 108* | 8.xii.1839 | *P. squorraso* | [none] | WA | *In salo limaso districtus* Vasse et Murray |
| 0067856A | *Preiss 108* | 8.xii.1839 | *P. squarrasa* | [*nane*] | WA | In *Nava Hallandia*, Swan River |
| 0713173B | *Preiss 108* | 8.xii.1839 | *P. squorrosa* | [*none*] | WA | |
| 2168760A | *s.n.* | | *P. squarrasa* | *Sanchus* | | *Dan* River |
| 00678S4A | *Mueller s.n.* | 10.i.1848 | *P. angustifolia* subsp. *angustifolia* | *P. squarroso* | SA | Third Creek |
| 0067854B | *Mueller s.n.* | 10.i.1848 | *P. squarrasa* | *P. squarrasa* | SA | Third Creek |
| 00677S9A | *Mueller s.n.* | 15.iv.1848 | *P. squarrasa* | *P. ongustifolia* var. *prolifica* | SA | Tanunda |
| 0067801A | *Mueller s.n.* | | *P. squarrosa* | *P. angustifalia* | SA | Gambier |
| 0067803A | *Mueller s.n.* | | *Picris* | *P. squorroso* | | |
| 0067834A | *Schulzen s.n.* | [c. 1848–53] | *Picris* | *P. angustifalio* | SA | near *Guichen* Bay |
| 00678S7A | *Moxwell s.n.* | | *P. drummondii* | *Picris* | WA | Oldfield River. Near the inlet. |
| 0067789A | *Waalls s.n.* | | *P. ongustifolia* subsp. *caralarum-henricorum* | [*nane*] | | |
| 0067822A | *Stuart s.n.* | xii.1855 | *P. angustifalia* subsp. *angustifalia* | *P. barbararum* | Tas. | *Sauthpart* |
| 0067767A | *Dallachy s.n.* | [1858] | *P. squarrosa* | *P. angustifalia* | Vic. | Murray River |
| 006783SA | *Stuart 10* | | *P. ongustifolio* subsp. *coralorum-henricorum* | *P. ongustifalia* | Qld | Breakfast Creek, near *Maretan* Bay |
| 0067780A | *Whan 11* | | *P. angustifalia* subsp. *angustifalia* | *P. angustifolio* | Vic. | *Bullaraak* Farest |
| 0067781A | *Whan 27* | | *Picris* | *P. angustifolia* | Vic. | [?Mount] *Emu* Creek |
| 0067794A | *Milligan 231* | | *P. ongustifolia* subsp. *angustifalia* | *P. hieraciaides* | Tas. | Hampshire Hills |
| 0067800A | *Beckler s.n.* | [1859–60] | *P. eichleri* | *P. hieraciaides ar* [none] | NSW | Hastings River |
| 0067800B | *Beckler s.n.* | [1859–60] | *P. angustifolia* subsp. *carolorum-henricorum* | *P. hieracioides or* [none] | NSW | Hastings River |
| 0067724A | *Beckler s.n.* | [1859–60] | *P. angustifolia* subsp. *carolorum-henricorum* | *P. hieracioides* | NSW | Macleay River |
| 0067787A | *Beckler s.n.* | [18S9–60] | *P. angustifalia* subsp. *caralarum-henricarum* | *Picris* | NSW | Clarence River |
| 0067855A | *Beckler s.n.* | [1859–60] | *P. angustifolio* subsp. *corolorum-henricorum* | [*none*] | NSW | Clarence River, River *Anne* |
| 0067787B | *Beckler s.n.* | [18S9–60] | *P. ongustifalia* subsp. *carolarum-henricarum* | *Picris* | NSW | McLennans [?Statian] |
| 0067785A | *Dallachy s.n.* | [1860] | *P. squorroso* | *Picris* | Vic. | Wimmera [River] |
| 0067786A | *Beckler s.n.* | [1860–1] | *P. squorrasa* | [*nane*] | NSW | Darling River [during the Burke and Wills Expeditian] |
| 006773SA | *Waterhouse s.n.* | [1860–1] | *P. angustifolia* subsp. *ongustifolio* | *P. hieraciaides* | SA | Kangaroo Island |
| 0067797A | *Oldfield s.n.* | [c. 1861] | *P. angustifolia* subsp. *angustifalia* | *P. hieraciaides* | WA | Capel River |

| MEL number | Collector and number | Collecting date | Current determination | Mueller's determination | State | Locality |
|---|---|---|---|---|---|---|
| 0067733A | *Oldfield s.n.* | [c. 1861] | *Picris* | *Picris* | WA | Blackwood River |
| 0067737A | *Thozet s.n.* | [c. 1859–62] | *P. ongustifolio* subsp. *carolorum-henricorum* | *P. hierocioides* | Qld | Keppel Bay |
| 0067772A | *Allitt s.n.* | | *P. squorroso* | [none] | Vic. | Mauth of Glenelg River |
| 0067730A | *Moore 54* | ii.1865 | *P. ongustifolio* subsp. *corolorum-henricorum* | *P. hierocioides* | NSW | Shoalhaven Gullies |
| 0067739A | *Fowcett s.n.* | | *P. ongustifolio* subsp. *corolorum-henricorum* | [none] | NSW | Richmond River |
| 0067790A | *?Stuort 86* | | *P. ongustifolio* subsp. *corolorum-henricorum* | *Picris* | NSW | Brunswick and Tweed Rivers |
| 0067796A | *s.n.* | | *P. ongustifolio* subsp. *corolorum-henricorum* | *Picris* | Qld | Rockhampton |
| 0067751A | *s.n.* | | *P. ongustifolio* subsp. *carolarum-henricorum* | [none] | | |

# *Rubus costifolius* and *R. bergii* in the National Herbarium of Victoria

**Abraham van de Beek**

Petenbos 8, 3904 BN Veenendaal, The Netherlands; e-mail: beekavd@xs4all.nl

## Abstract

Original specimens of *Rubus costifolius* Foerster have been found in the National Herbarium of Victoria (MEL) and this name turns out to be the correct name of the species that until now was named *R. longior* A.Beek. A lectotype is selected. Furthermore, specimens in the Sonder collection in MEL support synonymy of *R. bergii* Cham. & Schltdl. ex Eckl. & Zeyh. with *R. offinis* Weihe & Nees as had already been proposed by the author.

***Key words:*** Sonder, *Rubus longior, Rubus offinis, Rubus costifolius, Rubus bergii*

*Muelleria* 32:52–57 (2014)

## Introduction

In 1878, German entomologist and botanist Arnold Foerster (1810–1884) described *Rubus costifolius* Foerster in a footnote of his *Flora des Regierungsbezirkes Aachen*. Specimens of *Rubus* L. collected by Foerster are conserved in BR, but none of these is labelled with a name that Foerster used in his flora. Thus his herbarium does not help to interpret his short description of *R. costifolius*. However, in his text he mentions that the name is based on a specimen that Sonder collected at Burgsteinfurt and identified as *R. pubescens* Weihe. Burgsteinfurt is in the far north-west of Germany in the current state of North Rhine-Westphalia, near the Dutch border. Such a specimen was not found by Arne Anderberg who searched for me in the herbarium of the Swedish Museum of Natural History (S), where a part of Sonder's herbarium is conserved. The major part of the Sonder herbarium, however, is now conserved in MEL (Short 1990). Catherine Gallagher (MEL) was so kind as to search in the Sonder collection and succeeded in finding four sheets with well-preserved samples that were labelled as '*R. pubescens* Weihe'. Apart from this, she also found specimens labelled as '*Rubus bergii* E.& Z.', which were collected in South Africa. In this article I will discuss the identity and status of these specimens and typify *R. costifolius* Foerster.

## Interpretation and status of the specimens

### *Rubus costifolius* Foerster – the correct name of *Rubus longior* A.Beek

Until now, the identity of *Rubus costifolius* has not been clearly defined. Since the brambles of the region of Burgsteinfurt have been well explored from the 19th century to the present day, batologists have been inclined to conjecture about its description. Weber (1986) suggested that it might be *R. lindleianus* Lees. I considered the possibility of it being *R. poliothyrsus* A.Beek, which is closely related to *R. pubescens* Weihe (= *R. chloocladus* W.C.R.Watson) and is common just across the Dutch border south-east of Burgsteinfurt.

Surprisingly, the MEL specimens all belong to the species that has, since 1981, been known as *Rubus longior* A.Beek (Van de Beek 1981). Burgsteinfurt is the type locality of this name and the species is common

around this town. Having seen the specimens, it is strange that this identification was not considered previously. The remarkably strong veins upon which the epithet *'costifolius'* ('with veined leaves') is based, are even mentioned in the description of *R. longior* that I made myself (see http://rubus-nederland.nl/nl/soorten/alfabetische-namenlijst).

Banning and Focke had collected the same taxon in Burgsteinfurt in 1876, and Focke (1877) based *Rubus banningii* Focke on this material, naming it after the person with whom he found it. However, he cited the earlier named *Rubus pyramidatus* P.J.Müll. in synonymy under *R. banningii*, with two infraspecific taxa, '1. *Rubus pyramidatus*' and '2. *Rubus banningii* typicus (sens. strict.)'. Focke argued that the epithet in *R. pyramidatus* was too similar to that of *R. pyramidalis* Kaltenb. However the two epithets are not homonyms, and he should have taken the earlier *R. pyramidatus* as the species name. Consequently, *R. banningii* is nomenclaturally superfluous and a later synonym of *R. pyramidatus* of which the type is included (International Code of Nomenclature 2012, art. 52.1 and 2). I therefore provided it with a new name at species level: *R. longior* A.Beek (Van de Beek 1981). *Rubus pyramidatus* P.J.Müll. is a very different species, as Weber and I (Van de Beek & Weber 1994) pointed out after I found a type specimen in the herbarium of Bordeaux Botanical Garden (BORD). Thus, until now, the correct name of the taxon was *R. longior* A.Beek.

Since the publication of *R. costifolius* appeared a hundred years earlier, and is fully legitimate, this must now be the correct name. A lectotype can be chosen from the specimens in MEL because this part of Sonder's herbarium was purchased in 1883 (Short 1990) and thus was still in Germany when Foerster published his flora in 1878. Three of the sheets (MEL 2358120–22) contain inflorescences and one (MEL 2358123) two pieces of a primocane. The material of MEL 2358120–22 was conserved in one cover before being mounted and has only one label, so that it is obviously one gathering as the cross references in the numbering on the sheets also indicate. This is sufficient to meet the requirements of ICN art. 8.3. The writing of Latin words is in Latin handwriting and the German text about locality and date are in old German handwriting as Prof. Wim Janse (VU University Amsterdam) clarified. MEL 2358123 has a different label and appears in another cover. It might be that Sonder only arranged the specimens in this way because the former are floricanes and the latter primocanes. However, as this is uncertain, I chose only the collection MEL 2358120–22 as the lectotype, in order to avoid any ambiguity as for the type. MEL 2358123 must be considered a syntype because it is clear that Foerster used it for his description in the protologue, for he describes characteristics of the primocane which are lacking in the lectotype. It is possibly part of the lectotype, because it might be the primocane part of the same gathering as the lectotype.

The synonymy of the species would now appear as follows:

*Rubus costifolius* Foerster, *Fl. Regierungsbez. Aachen* 105 (1878); lectotypus (hic designatus): "Rubus pubescens Weihe/ Burgsteinfurt/ an Wegen ['along country roads']/ July 1835", *O. Sonder [Anon.] s.n.*: MEL 2358120–22 (Fig. 1). Syntype, possible part of lectotype gathering: MEL 2358123 (Fig. 2).

*Rubus banningii [typicus]* Focke, *Synopsis Ruborum Germaniae* 261 (1877), nom. illeg. type excluded; *Rubus longior* A.Beek, *Gorteria* 10: 149 (1981); holotypus (Van de Beek 1981): Focke, "Burgsteinfurt, 10.8.1876". BREM.

*Rubus costifolius* is common around Burgsteinfurt and is not rare in that region of Westphalia and in the east of the Netherlands (see Weber 1986; Kurtto et al. 2010; Van de Beek et al. 2014). It can vary conspicuously in the strength of the prickles, the density of both single and stellate hairs, and in the color of the petals (from white to reddish pink). The long inflorescences are characteristic.

## The identity of *Rubus bergii* Cham. & Schltdl. ex Eckl. & Zeyh. is confirmed

***Rubus bergii*** Cham. & Schltdl. ex Eckl. & Zeyh., Enum. pl. Afric. austral. 2: 262. 1836

***Specimens examined:*** *'Rubus* ... /prope urbem Capetown/ leg. Ecklon' and on another label, also in Ecklon's handwriting: *'R. bergii* E&Z. similis *R. affini* W&N' and further in old German handwriting : 'Mit dieser Bezeichnung hat Harvey die Pf[lanze] erhalten/ Sonder' ('Harvey received the plant with this identification/ Sonder') (MEL 2358124); *'R. bergii* E. & Z. / similis *R. affinis* W. & N. sed non idem videtur / prope urbem Cape Town / G. Ecklon 1841' (MEL 2358125–26) (Fig. 3).

**Figure 1.** Part of the lectotype of *Rubus costifolius* (MEL 2358122)

**Figure 2.** A syntype of *Rubus costifolius* (MEL 2358123)

Royal Botanic Gardens Melbourne
copyright reserved
0 1 2 3 4 5 6 7 8 9 10
cm
MEL 2358125
NATIONAL HERBARIUM OF VICTORIA (MEL)
Sheet 1 of 2 (MEL 2358125A, MEL 2358126A)
NATIONAL HERBARIUM OF VICTORIA (MEL), AUSTRALIA

**Figure 3.** A specimen of *Rubus bergii*, collected by Ecklon (MEL 2358125)

Four sheets were located in Sonder's collection in MEL with specimens of *Rubus bergii* Cham. & Schltdl.ex Eckl. & Zeyh. They belong to two collections as the cross references on the sheets indicate. The species name is based on a variety *Rubus fastigiatus* ?var. *bergii* Cham. & Schltdl., that Chamisso and Schlechtendal published in 1827, based on a specimen in the collection of Bergius ('inter plantas bergianas capenses'). The name is not validly published because, due to the '?' in the description, it does not meet the requirements of ICN art. 35.2. Because it is, however, the validating description of the species published by Ecklon & Zeyher, the type must be the specimen upon which the publication of Chamisso & Schlechtendal is based (ICN art. 7.7). This specimen has not been found, therefore I selected a neotype (Van de Beek 2014) from the specimens of Zeyher that Sieber sold after his return from the Cape in 1824 ("Flora capensis. Dornhoogde. In planitie capensi. Junio. Legit Zeyher. Communicavit Drejer" in P, sect. Africa). The neotype is identical to *R. affinis* Weihe & Nees (= *R. vigorosus* Wirtg.; see Van de Beek 2014). This identification already has solid ground in the fact that *R. affinis* is the only European *Rubus* to have been introduced in that region of South Africa. It is still common in the hills and mountains of the Western Cape. Both specimens in Sonder's collection (MEL 2358124 and 2358125–6) that were collected near Cape Town by Ecklon and labelled by him as *R. bergii* are also *R. affinis*, which supports the neotypification. Ecklon already noticed the similarity between *R. bergii* and *R. affinis* as the label on the sheet indicates, though he did not make a formal identification.

## Conclusion

The correct name of the species that was named *Rubus longior* A.Beek (syn. *R. banningii* Focke excluding the type) is *R. costifolius* Foerster. The identity of *R. bergii* Cham. & Schltdl. ex Eckl. & Zeyh. as a synomym of *R. affinis* Weihe & Nees is supported.

## Acknowledgements

I wish to thank Mr Arne Anderberg (S) and Ms Catherine Gallagher (MEL) for their research, and the staff of MEL for the production of the photos. I also thank Mr Heinrich Kuhbier and Mr Matthias Haase (BREM) for the photos of the specimens of *R. banningii* in the collection of Focke and Mr Wim Janse, Mr Jan van Booma and Mr Leo van Sante (Amsterdam), for their help in reading the labels.

## References

De Chamisso, L.K.A. and De Schlechtendal, D. (1827). De plantis in expeditione speculatoria Romanzoffiana observatis. *Linnaea* **2**, 1–37.

Ecklon, C.F. and C.L.P. Zeyher (1836). *Enumeratio plantorum Africae australis extratropicae*. Pethes & Besser: Hamburgi.

Focke, W.O. (1877). *Synopsis Ruborum Germanicae. Die deutschen Brombeerarten ausführlich beschrieben und erläutert*. C.E. Müller's Verlagsbuchhandlung: Bremen.

Foerster, A. (1878). *Flora excursioria des Regierungsbezirkes Aachen sowie der angrenzenden Gebiete der belgischen und holländischen Provinz Limburg*. Rudolph Barth: Aachen.

Kurtto, A., Weber, H.E., Lampinen, R. and Sennikov, A.N. (eds). (2010). *Atlas Florae Europaeae. Distribution of vascular plants in Europe. Rosaceae (Rubus)*. The Committee for Mapping the Flora of Europe & Societas Biologica Fennica Vanamo: Helsinki.

McNeill, J., Barrie, F.R., Buck, W.R., Demoulin, V., Greuter, W., Hawksworth, D.L., Herendeen, P.S., Knapp, S., Marhold, K., Prado, J., Prud'homme van Reine, W.F., Smith, G.F., Wiersema, J.H. and Turland, N.J. (2012). *International Code of Nomenclature for algae, fungi and plants (Melbourne Code)*. Regnum Vegetabile 154. Koeltz Scientific Books. Available on the web at <http://www.iapt-taxon.org/nomen/main.php>

Short, P.S. (1990). Politics and purchase of private herbaria by the National Herbarium of Victoria in P.S. Short (ed.) *History of systematic botany in Australasia*. (Australian Systematic Botany Society Inc: Canberra), pp. 8–13.

Van de Beek, A. (1981). Batologische notities 2. Nieuwe gegevens over *Rubus*. *Gorterio* **10**, 147–150.

Van de Beek, A. (2014). Nomenclatorische en taxonomische toelichting op de naamlijst van de Nederlandse bramen (*Rubus* L.). *Gorterio* **36** (in print)

Van de Beek A. and Weber, H.E. 1994. *Rubus bovinus*, spec.nov., en de identiteit van *R. pyramidatus* P.J.Müller. *Gorterio* **20**, 124–132.

Van de Beek, A., Bijlsma, R.J., Haveman, R., Meijer, K., De Ronde, Troelstra, A.S. and Weeda, E.J. (2014). Naamlijst en verspreidingsgegevens van de Nederlandse bramen (*Rubus* L. subgenus *Rubus*). *Gorteria* **36** (in print).

Weber, H.E. (1986). *Rubi Westfalici. Die Brombeeren Westfalens und des Raumes Osnabrück (Rubus L., subgenus Rubus)*. Westfälisches Museum für Naturkunde: Münster.

# Hidden treasures: Brazilian plants collected by Prince Maximilian zu Wied held in the National Herbarium of Victoria (MEL)

C.L. Gallagher[1] and P.L.R. de Moraes[2]

[1] National Herbarium of Victoria (MEL), Royal Botanic Gardens Melbourne, Private Bag 2000, South Yarra, Victoria 3141, Australia; e-mail: catherine.gallagher@rbg.vic.gov.au (corresponding author)

[2] Departamento de Botânica, Instituto de Biociências, Universidade Estadual Paulista "Júlio de Mesquita Filho", Av. 24 A 1515, Bela Vista, Caixa Postal 199, 13506-900 Rio Claro, SP, Brazil

## Abstract

The 'discovery' at MEL of some of the earliest extant herbarium specimens known from Brazil is detailed. The history and significance of 325 specimens collected by M.A.P. zu Wied in 1815–1817 is outlined and used to illustrate the value and relevance of the largely uncurated Sonder herbarium and wider foreign collection at MEL.

***Key words:*** Sonder herbarium, Wied-Neuwied, Brazil

*Muelleria* 32:58–71 (2014)

## Introduction

Maximilian Alexander Philipp, Prinz zu Wied-Neuwied (1782–1867; zu Wied as of 1824 (Roth 2001)) was one of the first European naturalists to visit Brazil when he explored the south-eastern regions in 1815–1817. Wied was a major in the Prussian army but his passions were ethnology and the natural sciences (Moraes 2009). Whilst in Brazil, Wied made extensive field notes and observations on indigenous South Americans and gathered a wealth of ethnological, zoological and botanical specimens. Despite being relatively well known for his ethnological and zoological studies, Wied's contributions to botany have, until recently, received less attention. Recognition is long overdue: Wied's botanical specimens are amongst the earliest extant collections from Brazil and are a precious record of the Atlantic rainforest flora of Rio de Janeiro, Espírito Santo and Bahia (Moraes 2009).

Wied gathered an estimated 5000 specimens of 1000 plant species in Brazil (Kuhn 1991). After failing to attract a buyer for his complete herbarium in 1824 (Eichler 1869), he sold and donated the collection in numerous lots. Karl Friedrich Philipp von Martius purchased a set of 650 specimens in 1828 (Eichler 1869); this material is now part of Herbarium Martii at the National Botanic Garden of Belgium (BR; herbaria are henceforth referred to by *Index Herbariorum* codes (Thiers 2013)). Wied donated approximately 600 specimens to his former professor Heinrich Adolf Schrader in Göttingen (Martius 1837); this material is now held in GOET, LE and W. Other sets ended up with Christian Gottfried Daniel Nees von Esenbeck (now held at B, G, GZU, LE and STR (Moraes et al. 2013b)); Karl Sigismund Kunth (now at B, but partly destroyed during the Second World War; Hiepko 1987; Moraes 2011) and Otto Wilhelm Sonder (primarily at MEL, with small quantities at M and S). Wied also retained specimens in his own private herbarium (Herbarium Wied); this material was presumed

lost until it was rediscovered in the library of the Palace of Neuwied in 1998 (Moraes 2009). Other duplicates and fragments are widely scattered across herbaria including BAA, BM, C, CTES, E, F, FI, FR, JE, K, L, LD, M, MO, NY, OKLA, P, S, TO, U and US (Moraes et al. 2013b).

A comprehensive survey of the literature and herbaria by Moraes et al. (2013b) has located 2741 specimens collected by Wied, with these representing 1274 species. The present study is focussed on the material held at MEL. This material had been largely overlooked until Moraes contacted the Collections Manager in June 2008, originally in pursuit of Friedrich Sellow specimens. Moraes suspected that MEL might hold Wied specimens; a search of the Lauraceae confirmed this and thus began a five-year quest.

## Methods

This study was part of a larger project that involved combing the literature and searching for specimens at herbaria including B, BR, FR, G, GOET, GZU, LD, M, TO, W and Herbarium Wied.

Approximately 70 families at MEL were systemically scoured. Families that are well-represented in the flora of south-eastern Brazil were prioritised, as were those with a high proportion of mounted material. Specimens were verified based on the original labels and annotations, and comparison with material held in other herbaria; this process is discussed in further detail later.

The early part of the collaboration was conducted entirely by e-mail. Progress was initially relatively slow due to challenges with recognising Wied specimens and the time required to extract, database and photograph material, examine images and compile notes, transfer comments onto annotation slips and update database records. Work was greatly expedited when Moraes spent three weeks at MEL in July 2011. Even so, a major limiting factor in this study was the arduous process of searching for specimens: trawling through thousands of folders of unmounted material, painstakingly ensuring that the arrangement of folders was preserved so as not to corrupt the relationship between loose specimens and labels. Specimens were often filed under synonyms or in indeterminavit folders, thus precluding targeted searches.

Specimen details are listed in full by Moraes et al. (2013b) and are thus not repeated here. Specimen data can be accessed via Australia's Virtual Herbarium (http://avh.chah.org.au). Images of the specimens will also eventually be available online via JSTOR Global Plants (http://plants.jstor.org).

## The Sonder herbarium

Wied's specimens came to MEL as part of the vast private herbarium of Otto Wilhelm Sonder (1812–1881). The Victorian government purchased the bulk of Sonder's herbarium in 1883, following a 24-year campaign by Government Botanist Ferdinand von Mueller (Short 1990).

A pharmacist and botanist, Sonder was extraordinarily energetic in his professional endeavours: he was the proprietor of a leading pharmaceutical establishment in Hamburg, a member of the medical board, an accomplished botanist and phycologist, and an avid collector and trader of botanical specimens (Short 1990). Mueller and Sonder established a correspondence sometime before 1858 (Home et al. 1998) and continued to exchange letters, books and specimens until Sonder's death in 1881. Unfortunately, few of their letters survive; much of Mueller's substantial archive of papers and correspondence disappeared, most likely disposed of when MEL was transferred to a new building in 1934–35 (Short 1990). Sonder's papers were destroyed in the aftermath of the Second World War (Home et al. 1998).

Regarded as 'the richest of all private botanical collections in existence' (Mueller 1859), the Sonder herbarium spans all major plant groups, algae and fungi. Mueller variously estimated it to comprise between 250,000 and 330,000 specimens (Mueller 1891, 1892). Such was the size of the collection, a new annexe had to be built at MEL to house it (Short 1990). The Sonder herbarium still accounts for the majority of MEL's estimated 400,000 foreign specimens. It includes important early 19th-century collections from tropical South America, Australia and southern Africa. Of particular note from South America are specimens cited in Martius' *Flora brasiliensis*, including material collected by F. Sellow, L. Riedel, A.F. Regnell, J.F. Widgren and Martius himself.

Mueller had a long-standing agreement with Sonder to purchase the herbarium for £1000 or ten instalments of £120 (Short 1990). Alas, aside from funding a single instalment (comprising three cases of specimens) in

1869, the Victorian government remained indifferent to Mueller's repeated propositions (Short 1990). Mueller persisted, and in 1882 finally triumphed in securing £900 for the balance of the Sonder herbarium. In the meantime, however, N.J. Andersson had approached Sonder seeking to purchase the collection for the Swedish Museum of Natural History (S; Nordenstam 1980). Fortunately for Mueller, Andersson was unable to raise the capital for the entire collection, and instead secured only Sonder's prized South African collection (Nordenstam 1980). Intriguingly, the Sonder collection at MEL is rich in South African specimens, suggesting that Sonder may not have been wholly truthful in his assurances to Andersson that the collection was fully intact (Nordenstam 1980). As noted by Nordenstam (1980), Sonder may well have separated duplicates and fragments for Mueller and/or himself when he sorted through his South African herbarium before shipping it to S in 1875. An alternative explanation, as suggested by Short (1990), is that much of the South African material at MEL derives from the three cases of specimens that arrived in 1869. Closer investigation may resolve this mystery.

Mueller took delivery of 38 cases of Sonder material on 13 November 1883 (Mueller 1883). The collection arrived without an accompanying inventory and is yet to be fully documented. Soon after receiving the material, Mueller flagged his intention to prepare 'a fuller account of the contents of this large collection' (Mueller 1883). Alas, no such record has been located. The only published accounts of the Sonder collection are very general (Court 1972), concerned primarily with the history of its acquisition (Short 1990), or limited to a particular taxonomic group (e.g. Anderson 1971). Efforts to survey and document the collection are hindered by the sheer volume of material and the relatively inaccessible state of the specimens: less than 15 per cent are mounted and databased. Most of the material is still stored much as it was when it arrived at MEL 130 years ago: in bundles of intricately interleaved paper folders containing loose specimens with loose labels. This lack of documentation and poor accessibility mean that MEL's foreign collection is not well known within the international botanical community.

## The Wied collection at MEL

Little is known as to how and when Sonder acquired Wied's specimens. Wied began distributing material to botanists such as Schrader, Nees and Martius soon after he returned from Brazil in 1817. It is possible, but unlikely, that Sonder received specimens directly from Wied. As noted by Eichler (1869), Wied first offered his collection for sale in 1824, at which time Sonder was just 12 years old. Specimens at BR indicate that Wied continued to send material to Martius until 1839. However, Sonder did not establish his pharmacy until 1841 (Stafleu & Cowan 1985) and is thus unlikely to have had the means to acquire collections such as Wied's before then. More plausible is that Sonder obtained the Wied specimens through other channels at a later date. Sonder became very well-connected in the commercial trade of botanical specimens: as well as purchasing collections for himself, he acted as an agent to procure specimens on behalf of others (Nordenstam 1980). He also regularly loaned and exchanged material with a wide range of prominent botanists (Nordenstam 1980). Given that Berg (1857) cited Wied specimens as 'Herb. Sonder' in his account of the Myrtaceae in the *Flora brasiliensis*, Sonder evidently obtained at least some of the Wied material well before 1857.

A search of more than 70 families at MEL has so far yielded 325 Wied specimens, spanning 150 genera and 259 species of vascular plants. Of particular note are 145 type specimens, including several unicates, e.g.:

- MEL 2353741 – Holotype of *Stenocalyx sulcatus* var. *strictus* O.Berg, *Fl. Bras.* 14(1): 339 (1857) = *Eugenia sulcata* var. *stricta* (O.Berg) Mattos (Myrtaceae; fig. 1).

Also of note are duplicates of specimens that were destroyed by fire when the Botanical Museum in Berlin (B) was bombed by the allied forces on the night of March 1–2, 1943 (Hiepko 1987), e.g.:

- MEL 2062015 – Lectotype of *Zollernia falcata* Wied-Neuw. & Nees = *Z. glabra* (Spreng.) Yakovlev (Fabaceae)
- MEL 289020 – Isolectotype of *Zollernia splendens* Wied-Neuw. & Nees (Fabaceae)
- MEL 2353844 and MEL 2353845 – Syntypes of *Evolvulus maximilianii* Mart. ex Choisy (Convolvulaceae)
- MEL 2353782 – *Anthurium intermedium* Kunth (Araceae)

At least one specimen represents a new record: *Neomarica humilis* (Klatt) Capell. has not previously been recorded from Bahia (Capellari Jr. 2000; Gil 2012). Two specimens located at MEL are the first (and possibly only) verifiable record of this species from Bahia, and are thus a compelling example of the importance and enduring value of Wied's collections:

- MEL 2355228 – Holotype of *Cypella humilis* Klatt, *Linnaea* 31: 540 (1862) = *Neomarica humilis* (Klatt) Capell. (Iridaceae; fig. 2)
- MEL 2355229 – Isotype of *Cypella humilis* Klatt = *Neomarica humilis* (Klatt) Capell. (Iridaceae)

These specimens also present an interesting nomenclatural case. The original label on MEL 2355228 is annotated by Nees with 'Moraea Northiana v. β breviscapa N. ab E.' Nees and Martius (Wied-Neuwied 1823) somewhat ambiguously describe 'Moraea northiana var. scapo foliis breviore, spathis unifloris' and propose the name *Moraea breviscapa* should the taxon be deemed a species in its own right. However, under article 36.1 of the *International Code of Nomenclature for algae, fungi, and plants* (McNeill et al. 2012), this does not constitute valid publication of the name *Moraea breviscapa*. Klatt's (1862) subsequent publication of *Cypella humilis* Klatt is thus valid.

The specimens at MEL are richly documented with Wied's original labels. Paradoxically, recognising Wied specimens was a challenge in the early stages of the study. Wied's labels tend to be either scrawled in pencil or (relatively) neatly penned in ink. The former vary in format, detail and legibility (at least to the uninitiated; figs. 8b–d and f). The latter are more distinctive (and legible) and typically include more detail (figs. 8a and j). Aside from Wied's own labels, there is a remarkable array of other labels and annotations, including specimens labelled by Sonder (fig. 8g) and/or annotated by Martius (figs. 8e and h), Berg (fig. 8a), Nees (fig. 8b), Klatt (fig. 8b), Koernicke (fig. 8g) and others.

Wied is not explicitly designated as the collector on almost two thirds of the sheets at MEL; these specimens can only be recognised based on the handwriting, localities, and/or annotations by botanists such as Berg and Martius. Where Wied is indicated on the label, he is variously denoted as Neovid., Neowied., Neuwied, Princ. Neovidensis, Prinz Max. v. Neuwied and variations thereof. Wied numbered a small proportion of specimens himself, but for some reason, most of these numbers have been crossed out. Several specimens have been numbered by Schrader (fig. 7) and Nees.

The collecting locality is specified on approximately half of the specimens at MEL, but is sometimes heavily abbreviated (e.g. Str.d.C.F.B. = Straße des Colonel Felisberto Brant, a road linking Ilhéus with Minas Gerais. Wied travelled from 'S. Pedro Alcantara' (Itabuna) to 'Barra da Vareda' (Inhobim) (Wied-Neuwied 1821)). Although Wied's itineraries have been well-documented by Wied himself (Wied-Neuwied 1820, 1821) and others (e.g. Urban 1906; Bokermann 1957), there are occasionally discrepancies between the localities and dates recorded on the labels and those documented in Wied's own itineraries (Moraes et al. 2013b). Certain localities can be regarded as exclusive toponyms, in that they were not visited by any other European collectors in the early 19th century (e.g. 'Aldea Velha', 'Barra de Jucu', 'Campos Novos', 'Itapemirim', 'Moribeca', 'Mucuri', 'Rio Belmonte', 'Rio Doce' and 'Tamburil and Valo'; Moraes et al. 2013a).

Online resources such as JSTOR Global Plants were invaluable for accessing images of specimens held in other herbaria. However, the value of such resources was only fully realised when images were accompanied by a transcribed and translated record of the label information. Unfortunately, only a small minority of records include this level of detail. There is enormous scope for online resources to become a powerful tool to aid curators to recognise handwriting, decipher and translate labels, interpret localities and georeference specimens.

Despite encompassing just over half of the total number of families collected by Wied, this study indicates that the material at MEL represents the second most comprehensive set of Wied specimens, eclipsed only by the Herbarium Martii at BR. This is nicely exemplified in both the Myrtaceae and Eriocaulaceae. In his account of the Myrtaceae for the *Flora brasiliensis*, Berg (1857) cited Wied specimens for 31 species; 23 have so far been found at MEL, 18 of which are nomenclatural types. Only three of these have been recognised previously (Anderson 1971). In the Eriocaulaceae, Koernicke (1863) cited 20 Wied specimens in the *Flora brasiliensis*; 18 have been located at MEL and all but one are known only from MEL.

Royal Botanic Gardens Melbourne
0 1 2 3 4 5 6 7 8 9 10 cm
copyright reserved
National Herbarium of Victoria (MEL)
Determinavit: P.L.R. de Moraes 19 Jul 2011
MEL 2353741
NATIONAL HERBARIUM OF VICTORIA (MEL), AUSTRALIA

**Figure 1.** MEL 2353741 – Holotype of *Stenocalyx sulcatus* var. *strictus* O.Berg. [Rio de Janeiro, *M.A.P. zu Wied s.n.*], Sept. 1815. See fig. 8a for label detail and transcription. All images reproduced with permission from the National Herbarium of Victoria (MEL), Royal Botanic Gardens Melbourne.

National Herbarium of Victoria, Melbourne.
Marica humilis Sodd.
(Cypella humilis, Klatt)
(Iridaceae Kunthianae)
National Herbarium of Victoria (MEL)
Annotation: P.L.R. de Moraes 14 Jul 2011
National Herbarium of Victoria (MEL)
Annotation: P.L.R. de Moraes 14 Jul 2011
MEL 2355228
Royal Botanic Gardens Melbourne
copyright reserved
0 1 2 3 4 5 6 7 8 9 10 cm
NATIONAL HERBARIUM OF VICTORIA (MEL), AUSTRALIA

**Figure 2.** MEL 2355228 – Holotype of *Cypella humilis* Klatt. [Bahia:] Capo da Filisberto [via Felisbertia], *M.A.P. zu Wied s.n., s.d.* See fig. 8b for label detail and transcription.

Royal Botanic Gardens Melbourne
copyright reserved
0 1 2 3 4 5 6 7 8 9 10
cm
MEL 2331220
National Herbarium of Victoria (MEL)
Annotation: P.L.R. de Moraes 22 Jul 2011
NATIONAL HERBARIUM OF
VICTORIA (MEL), AUSTRALIA

**Figure 3.** MEL 2331220 – *Coccoloba arborescens* (Vell.) R.A.Howard (Polygonaceae). [Rio de Janeiro: between] St. Juan [= San João] – Rio dos Oistres [= Rio dos Ostras, *M.A.P. zu Wied s.n.*, Sep 1815]. See fig. 8c for label detail and transcription.

Royal Botanic Gardens Melbourne
copyright reserved
0 1 2 3 4 5 6 7 8 9 10
cm
MEL 2341135
NATIONAL HERBARIUM OF VICTORIA (MEL), AUSTRALIA

**Figure 4.** MEL 2341135 – *Alsodeia physiphora* Mart. = *Rinorea laevigata* (Sol. ex Ging.) Hekking (Violaceae). [Rio de Janeiro: Fazenda de] Campos Novos [= Tamoios] et Rio Jo. [= Rio de Janeiro, *M.A.P. zu Wied s.n.*, Sep. 181S]. See fig. 8d for label detail and transcription.

cm
0 1 2 3 4 5 6 7 8 9 10
copyright reserved
Royal Botanic Gardens Melbourne
MEL 2353803
National Herbarium of Victoria [MEL]
Annotation P.L.R. de Moraes 22 Jul 2011
NATIONAL HERBARIUM OF VICTORIA (MEL), AUSTRALIA

**Figure 5.** MEL 23S3803 – *Adenocalymma trifoliatum* (Vell.) R.C.Laroche (Bignoniaceae). [Bahia:] Str d Capt. Filisbert. [= Straße des Capitam Filisberto Gomes da Silva, *M.A.P. zu Wied s.n.*, Jan 1817]. See figs. 8e–f for label detail and transcription.

Royal Botanic Gardens Melbourne
copyright reserved
cm
0 1 2 3 4 5 6 7 8 9 10
National Herbarium of Victoria (MEL)
Determinavit P.L.R. de Moraes 19 Jul 2011
MEL 2353747
NATIONAL HERBARIUM OF VICTORIA (MEL), AUSTRALIA

**Figure 6.** MEL 2353747 – Syntype of *Paepalanthus fluitans* Mart. ex Körn. = *Leiothrix fluitans* (Mart. ex Körn.) Ruhland (Eriocaulaceae). Brazil. *M.A.P. zu Wied s.n., s.d.* See fig. 8g for label detail and transcription.

cm 0 1 2 3 4 5 6 7 8 9 10
copyright reserved
Royal Botanic Gardens Melbourne
MEL 2353799
National Herbarium of Victoria (MEL)
Annotation P.L.R. de Moraes 22 Jul 2011
NATIONAL HERBARIUM OF VICTORIA (MEL), AUSTRALIA

**Figure 7.** MEL 2353799 – *Pyrostegia venusta* (Ker Gawl.) Miers (Bignoniaceae). [Bahia:] R.B. [= Rio Belmonte, *M.A.P. zu Wied s.n.*, 1816]. See figs. 8h–j for label detail and transcription.

**Figure 8.** Label detail. **a.** MEL 2353741. Scripsit Wied: "19./ Eugenia/ Sept. 1815/ Buschbaum von 10–12 f. [= shrubby tree of 10–12 ft]". Scripsit Berg: "*Stenacalyx sulcatus* γ *strictus* Bg./ Martius"; **b.** MEL 2355228. Scripsit Wied (in pencil): "Ist der […] / Str[aße] d[es] Capt. Filisbert." Scripsit Nees: "*Moraea Northiana* v. β *breviscapa*". Scripsit Klatt: "*Cypella humilis* (*Marica humilis* Ladd., Bot. Cab. 1081." Scripsit Sander: "(Nees ab Esenb.)/ Max. Prinz. v. Neuwied/ Capa Fili[s]berta/ Brasil"; **c.** MEL 2331220. Scripsit Wied: "Pentandr[ia] monogynia/ zwisch[en] St. Juan – Ria dos Oistres/ Bl[ume] weißgelb[lich] [= flawer whitish-yellaw]"; **d.** MEL 2341135. Scripsit Wied: "*Alsodeia* – Violaceae/ Pentand[ria] managyn[ia]/ Campas novas et Rio Jo./ Capsula tricacca/ *A. physiphara* Mart. […]"; **e.** MEL 2353803. Scripsit Martius: "*Adenacalymna longiracemasum* β *trichacladum*"; **f.** MEL 2353803. Scripsit Wied: "*Bignania*/ Str[aße] d[es] Capt. Filisbert."; **g.** MEL 2353747. Scripsit Sander: "Brasilia/ Prz. M. v. Neuwied". Scripsit Koernicke: "*Paepalanthus* (*Lophophyllum*) *fluitans* Mart"; **h.** MEL 2353799. Scripsit Martius: "*Bignonia venusta* Ker/ videtur./ DC. n. 88"; **i.** MEL 2353799. Scripsit Wied: "Schrader Bignan./ No. VI +"; **j.** MEL 2353799. Scripsit Wied: "Schlingende Pfl./ mit hoch Orangen/ farbiger Blumen/ R.B. [= twining plant with highly arange calared flawers/ Rio Belmante]".

All of the specimens found so far at MEL are vascular plants. Wied is known to have collected cryptogams, but these specimens are poorly documented in both the literature and herbaria. The Sonder herbarium is rich in cryptogamic material; if any of Wied's cryptogamic specimens have survived, they are quite possibly at MEL. However, partial searches of the bryophyte, lichen and Rhodophyta collections have so far failed to yield any specimens.

Based on the findings to date, MEL is likely to hold Wied specimens of a further 100 species.

## Conclusion

This study has delivered several noteworthy outcomes. First and foremost, the Wied specimens unearthed at MEL are fully accessible to researchers for the first time in almost 200 years. These specimens are a precious record of the Atlantic rainforest flora of south-eastern Brazil in the early 19th century. Far from being a mere historical curiosity, this material is directly relevant to current research and conservation efforts. In particular, the high proportion of types means that the Wied collection at MEL is essential to taxonomic studies of the Brazilian flora.

Secondly, the curated specimens will facilitate the recognition of further Wied material, both at MEL and elsewhere. Because the MEL specimens are so well-documented with original labels, they are an invaluable reference to aid curators to recognise and decipher Wied's labels. Many of the specimens held in other herbaria bear labels and/or annotations from Martius, Schrader, Nees, Wilhelm Klenze (Klaenze) and Karl Theodor Mencke (Menke), and have been wrongly attributed to these botanists in both the literature and herbarium databases. Already, MEL material has been instrumental in disentangling such misinterpretations (e.g. Moraes et al. 2013a, 2013b).

Thirdly, this study highlights the value of international collaboration in curating historical collections. More specifically, this investigation demonstrates the benefits of engaging a knowledgeable external botanist or curator to survey and assess specimens in partnership with the custodian collection's staff. In this respect, this study could serve as a model for future projects targeting specific components of MEL's foreign collection. Such projects would essentially function as reconnaissance missions to identify significant but cryptic specimens and equip collections staff with the knowledge and resources necessary to curate specimens accurately and efficiently.

Finally, this study is a small step towards uncovering and documenting the hidden riches of the Sonder collection at MEL. Perhaps more than anything, it provides a tantalising promise of other significant, but as yet undiscovered, material.

## Acknowledgements

P.L.R. de Moraes is grateful for the FUNDUNESP grant (Proc. Nr. 00073/11-DFP) that supported his visit to MEL, sponsorship from the CAPES/DAAD Agreement in 2008 for a visit to BR and grants from CNPq (PQ2 and Proc. Nr. 450515/2013-3 for a visit to LE). C. Gallagher thanks the Friends of the Royal Botanic Gardens Melbourne Inc. for providing scholarship funds to attend the 2013 DEST Botanical Nomenclature training course at the Royal Botanic Gardens, Kew, and Pina Milne (MEL Collections Manager) for her encouragement and support. The authors are also indebted to Tom May, Juergen Kellermann and an anonymous referee for their helpful comments and suggestions on the manuscript.

## References

Anderson, J.A. (1971). Otto Carl Berg's types of Myrtaceae in the National Herbarium of Victoria. *Muelleria* **2(2)**, 119–131.

Berg, O.C. (1857). 'Myrtaceae', Pars prima (trib. Myrteae), in K.F.P. von Martius (ed.), *Flaro brasiliensis* **14(1)**, 1–468, t. 1–35. Typographia Regia: Munich.

Bakermann, W.C.A. (1957). Atualização do itinerário da viagem do Principe de Wied ao Brasil (1815–1817). *Arquivos de Zoologio do Estado de Sõa Poula* **10**, 209–251.

Capellari Jr., L. (2000). *Revisõa taxanômica da gênera* Neomarica *Sprague (Triba Mariceae, Subfomília Iridoideoe, Iridoceoe)*. D.Sc. thesis, Universidade Estadual de Campinas, Campinas.

Court, A.B. (1972). Preliminary natice on the Sonder collectian in the National Herbarium af Victoria. *Muellerio* **2(3)**, 188.

Eichler, A.W. (1869). *Das Herborium Martii*. Kgl. Hofbuchdruckerei van Dr C. Walf & Sahn: Munich.

Gil, A.S.B. (2012). *Revisão toxanômica e estudas filogenéticos da gênera* Neamarica *s.l. (Iridoceae)*. D.Sc. thesis, Universidade Estadual de Campinas, Campinas.

Hiepka, P. (1987). The collections af the Botanical Museum Berlin-Dahlem (B) and their history. *Englera* **7**, 219–252. Available at http://www.bgbm.org/bgbm/research/colls/herb/hist2.htm

Home, R.W., Lucas, A.M., Maraske, S., Sinkora, D.M. and Voigt, J.H. (eds) (1998). *Regordfully yaurs: selected correspondence of Ferdinond von Mueller, val. 1: 1840–1859*. Peter Lang: Bern.

Klatt, F.W. (1862). Specimen e familia Iridearum. *Linnaea* **31**, 533–570.

Koernicke, F. (1863). 'Eriocaulaceae', in K.F.P. von Martius and A.W. Eichler (eds.) *Flora brasiliensis* **3(1)**, 273–508. Typographia Regia: Munich.

Kuhn, D. (1991). 'Einführung', in *Brasilien-Bibliothek der Robert Bosch GmbH: Katalog. Bd. 2. Nachlaß des Prinzen Maximilian zu Wied-Neuwied / Teil 2: Briefwechsel und Zeichnungen zu den naturhistorischen Werken*, pp. 9–21. Deutsche Verlags-Anstalt GmbH: Stuttgart.

Martius, K.F.P. von (1837). Herbarium Florae brasiliensis (Einleitung; I. Zur Literärgeschichte der Flora brasiliensis). *Flora* **20(2, Beibl.)**, 1–49.

McNeill, J., Barrie, F.R., Buck, W.R., Demoulin, V., Greuter, W., Hawksworth, D.L., Herendeen, P.S., Knapp, S., Marhold, K., Prado, J., Prud'homme van Reine, W.F., Smith, G.F., Wiersema, J.H. and Turland, N.J. (2012). *International Code of Nomenclature for algae, fungi, and plants (Melbourne Code)*. Regnum Vegetabile 154. Koeltz Scientific Books: Berlin. Available at http://www.iapt-taxon.org/nomen/main.php

Moraes P.L.R. de. (2009). The Brazilian herbarium of Maximilian, Prince of Wied. *Neodiversity* **4**, 16–51. Available at http://www.neodiversity.org/articles/neod4201.pdf

Moraes P.L.R. de. (2011). Notes and lectotypification of names based on Brazilian collections of Prince Maximilian of Wied. *Kew Bulletin* **66**, 493–503.

Moraes, P.L.R. de, Smedt, S. de, Esser, H.-J., Gallagher, C. and Guglielmone, L. (2013a). On some Brazilian plants distributed by Martius in 1827 and published by Colla in 1833. *Harvard Papers in Botony* **18(1)**, 23–36.

Moraes, P.L.R. de, Robbrecht, E., Smedt, S. de, Dressler, S., Heinrichs, J., Reiner-Drehwald, M.H., Drescher, A., Scharfetter, A., Frödén, P., Esser, H.-J., Gallagher, C., Guglielmone, L. and Rainer, H. (2013b). Catalogue of Brazilian plants collected by Prince Maximilian of Wied. *Scripta Botanica Belgica* **49**, 1–249.

Mueller, F.J.H. (1859). Unpublished memorandum to the Chief Secretary's office, dated 1 November 1859. PROV, VPRS 1189, box 747.

Mueller, F.J.H. (1883). Unpublished memorandum to the Chief Secretary's office, dated 14 November 1883. PROV, VPRS 3991, box 1418.

Mueller, F.J.H. (1891). Unpublished letter to H.G.A. Engler, dated 14 December 1891. Staatsbibliothek, Preussicher Kulturbesitz, Berlin.

Mueller, F.J.H. (1892). Unpublished letter to J.G. Agardh, dated 8 August 1892. Univ. Library, Lund.

Nordenstam, B. (1980). The herbaria of Lehmann and Sonder in Stockholm, with special reference to the Ecklon and Zeyher collection. *Taxon* **29**, 279–288.

Roth, H.J. (2001). Maximilian Prinz zu Wied (1782–1867). Zum Nachdruck seiner "Reise nach Brasilien" anlässlich der 500-Jahrfeier des Landes. *Jahrbücher des Nossauischen Vereins für Naturkunde* **122**, 139–147.

Short, P.S. (1990). 'Politics and the purchase of private herbaria by the National Herbarium of Victoria', in Short, P.S. (ed.), *History of Systematic Botany in Australasia*. Australian Systematic Botany Society: Melbourne.

Stafleu, F.A. and Cowan, R.S. (1985). *Taxonomic Literature: a selective guide to botanical publicotions and collections with dates, commentaries and types*, vol. 5. Bohn, Scheltema & Holkema: Utrecht.

Thiers, B. (2013). *Index Herbariorum: a global directory of public herbaria and associated staff*. New York Botanical Garden's Virtual Herbarium. Available at http://sciweb.nybg.org/science2/IndexHerbariorum.asp

Urban, I. (1906). 'Vitae itineraque collectorum botanicorum', in K.F.P. von Martius, A.W. Eichler and I. Urban (eds), *Flora brasiliensis* **1(1)**, 1–154. Typographia Regia: Munich.

Wied-Neuwied M.A.P. zu. (1820). *Reise nach Brasilien in den Jahren 1815 bis 1817. Erster Band*. (Quarto edition). Heinrich Ludwig Brönner: Frankfurt am Main.

Wied-Neuwied M.A.P. zu. (1821). *Reise nach Brasilien in den Jahren 1815 bis 1817. Zweyter Band*. (Quarto edition). Heinrich Ludwig Brönner: Frankfurt am Main.

Wied-Neuwied, M.A.P. zu. (1823). Beitrag zur Flora Brasiliens. *Novo Acto Physico-Medico Academioe Caesoreae Leopoldino-Carolinea Naturae Curiosorum* **11**, 1–88.

# 'A taste for botanic science': Ferdinand Mueller's female collectors and the history of Australian botany

Sara Maroske

Royal Botanic Gardens Melbourne, South Yarra, Victoria 3141, Australia

## Abstract

In 1884, Ferdinand Mueller, Government Botanist of Victoria, told his collector Mary Bate that she was 'one of the very few' women in Australia interested in botany in contrast to the situation in Europe and North America. This proposition is assessed using Maroske and Vaughan's biographical register (2014), which identifies 225 of Mueller's female collectors, and outlines their contribution to Australian botany. An analysis of this register reveals that Mueller achieved a scale and level of engagement between Australian women and botany far in excess of the benchmark he described to Mary Bate. This is an achievement that has not been acknowledged in the history of Australian botany.

***Key words:*** plant collecting, colonial science, gender history

*Muelleria* 32:72–91 (2014)

## Introduction

In 1884, Ferdinand Mueller, Government Botanist of Victoria, told his New South Wales based collector, Mary Bate, '*You* are one of the very few Ladies in all Australia, who have any taste for botanic science, in contrast to what is observed in all Europe and North America' (L84.07.20). Mueller made this remark during a period in the Western world when the study of natural history had opened up to the general population, and the study of botany, in particular, was possible for girls and women (Watts 2007). Nevertheless, in opining the relative lack of enthusiasm Australian women had for his favourite science, Mueller was also playing an active part in overcoming it. His letter to Bate was in fact a persuasive, intended to encourage this young woman to remain engaged in what could be an uncomfortable pastime in the bush around Tilba Tilba, by allying her with her more demure flower-pressing and painting sisters at 'Home' in the United Kingdom.

Although he was Government Botanist of Victoria, Mueller's ambition had long been to write a flora of Australia, and to achieve this goal he needed all possible help in collecting specimens. If this meant pushing the boundaries of what was deemed normative behaviour for women in 19th-century Australia, then so be it. The bargain he was proposing seemed clear. In return for specimens of all named and novel species to be found in Australia, Mueller would help all-comers to develop a 'taste' for botany.

As Mueller was the central focus of the resulting collecting network, his power in shaping its processes should not be underestimated, but the relationships he developed with its members did not remain entirely within his purview. The collectors responded individually to their environments and to the directions of their tutor, developing their own appetites and talents for botany. At end of 43 years of service as Government Botanist, Mueller's collectors had helped him to accumulate a significant Australian herbarium in Melbourne, and to assist in the production of a flora of Australia, the first achievement of which he was unreservedly proud. The network of collectors itself, however, can also be regarded as one of his greatest achievements. Mueller did not distinguish the female members as a group, but the welcome he extended to them set him apart from his

male botanical peers. In so doing, he also helped to create a rich, diverse, and what has been a historically under-appreciated, heritage for women's engagement in botany in Australia.

## Background

The period known as the Enlightenment is now recognised as the beginning of a golden era for women in botany in the Western world. A cultural tradition that linked femininity with nature, and a new interest in reason and rights, combined to 'smooth the path' for women's entry' into botanical work of many kinds' (Shteir 1996: 3). Girls and women continued to participate in botany into the 19th century but, as the discipline became more professional, they were relegated to the ranks of the amateurs and hobbyists (Shteir 1996: 5). General histories of science have tended to accept this gender division and celebrated the achievements of 'the great men' of science even when 'great women' were involved (Kass-Simon & Farnes 1990: ix).

Under the influence of feminism in the 1970s, historians began to recover the contributions of women to botany, and to investigate the discrimination that they have faced when trying to participate in science, and in obtaining due recognition. Shteir (1996) focusses on women and botany in England, Rudolph (1982) and Slack (1987) take on the United States of America, and most recently Olsen (2013) looked at botanical artists in Australia.

This study has been able to utilise a biographical register of 225 of Mueller's female botanical collectors compiled by Maroske and Vaughan (2014) that recovers the early history of women in Australian botany. The register brings into focus individuals who it has only recently been possible to identify in historical records, and who, compared to most women discussed in the history of Australian botany, are relatively unexceptional and fleeting participants in botanical activities.

Moreover, by comparing Mueller's female collectors with his male collectors, and with other collecting and botanical networks, this study has also been able to introduce quantitative analysis into a discussion in which it has mostly been lacking. All biographical information given in this article about female collectors is from Maroske and Vaughan (2014) unless otherwise specified.

## Plant collectors

The reason that Mueller needed to establish a network of plant collectors in the first place was because he wanted to write a flora of Australia. He had probably nurtured this ambition from the time he arrived in the colony of South Australia in 1847, and boldly confessed it in his first letter to William Hooker, the Director of the Kew Botanic Garden, in 1853. 'I can assure you,' Mueller told Hooker, 'that neither egoism nor overestimation of my own powers, but only my ardent desire to promote our favourite science, is the impulse to a task, so laborious, so triing [*sic*] and so perilous' (L53.02.03).

To produce a flora, Mueller needed specimens of all the plants that grew in Australia. These would enable him to compile a complete list of the already described Australian species, and to give names to any species that had not yet been formally described. In his first decade in Australia, Mueller collected many of the necessary specimens, and in the 1860s liked to refer to himself as one of the world's most well-travelled botanists (e.g. L60.04.20). Nevertheless, Australia is such a vast country that it simply was not possible for him to collect all the specimens that he needed. To make up the shortfall, like other botanists who wrote floras, he recruited a network of collectors. As he put it in the *Perth Gazette* in 1869: 'Without such collateral local aid my works on the plants of the continent can never be completed' (19 February 1869: 2).

The typical 19th-century plant collector was a European man, but Mueller also sought out women, children, and Aboriginal Australians to undertake this work. There is no evidence that Mueller privileged women in his search for collectors, but he did exploit society's acceptance of women's interest in botany to make his network of collectors as large as possible. Moreover, in pushing the boundaries of what was possible for women and girls, he achieved some significant firsts among his female collectors for his collecting network as a whole.

### Children

Of Mueller's 225 female plant collectors, 10 per cent can be defined as children in that they were 17 years or under when they collected their first known specimen for Mueller. Five were under ten years of age (Table 1).

**Table 1.** The age of Mueller's female collectors at the time of their first collection

| Age at first collection | Number active (of 225) | % active |
|---|---|---|
| 0–10 | 6 | 3 |
| 11–20 | 26 | 12 |
| 21–30 | 38 | 17 |
| 31–40 | 24 | 11 |
| 41–50 | 21 | 9 |
| 51–60 | 10 | 4 |
| 61–70 | 8 | 4 |
| 71–80 | 2 | 1 |
| unknown | 90 | 40 |

The youngest was probably Kathleen Ryan who was six years of age when she collected her first specimen for Mueller. Kathleen was the daughter of post and telegraph master Michael Ryan and his wife, Clara, who lived in Western Australia.

From Mueller's point of view, children were suitable plant collectors because they had sufficient ability to make useable collections, they could be induced to spend time in collecting with small rewards, and parents could be persuaded to encourage children to collect with a view to improving their education. Mueller was also prepared to entertain the possibility that children had some natural advantages over other collectors. As he told Kathleen Ryan's mother, Clara, in 1896: 'The young eyes of your children would soon discover the various minute land-plants near you, if once their attention was directed to them' (L96.02.02). Given that Mueller was seventy years old when he wrote this letter, with his own failing eye-sight requiring him to form ever larger handwriting, it was a point that he could appreciate.

The child-collector's point of view is more elusive. A letter from 13-year-old May Wise of Sale, Victoria, is a rare example of the voice of one of Mueller's girl collectors. 'We had a holiday from school and spent it down the Port Albert Road collecting plants,' Wise wrote to Mueller in 1895 (L95.10.01). Wise was fascinated by the orchids of her district and, with Mueller's encouragement, communicated a list of them, compiled with her sister, Lilian, and friend, Muriel Bennett, to the Field Naturalists' Club of Victoria in 1895 (*Victorian Naturalist* May 1895: 13).

Many of Mueller's girl collectors, especially the younger ones, were joined in specimen hunting by their mothers. These mothers were usually teachers at home, and saw the surrounding bushland as a large open classroom. This was certainly the case with Annie McCann, who raised nine children, including daughter and fellow Mueller collector Mona McCann, at Snowy Creek in north-eastern Victoria. Mueller sent Annie a copy of his educational text *Botanic Teachings* (1879) for her children. 'Words are but weak vehicles to convey all the thanks I would fain offer to you for your valuable work', she replied in poetical style. 'Believe me it shall long be a prized *souvenir* as well as a warm incentive in promoting that study of which I am such an ardent worshipper' (L82.03.00).

## Aboriginal Australians

It is clear from a number of newspaper articles and letters that Mueller targetted Aboriginal Australians as collectors, but only as the assistants of Europeans (e.g. *West Australian* (1883) 24 July: 2; L95.08.29 to Clara Ryan). In the *West Australian* he urged 'inland and northern and far eastern settlers to induce the natives to bring, in baskets, specimens of all sorts of plants, to be dried at the stations and forwarded to me by post'. By this method, Mueller hoped that he could obtain specimens beyond the settled districts. 'The small expenditure required for barter articles I would gladly refund', Mueller added, and 'every finder will get in my works credit for his respective discoveries'. In this context, 'finder' presumably meant 'settler' rather than 'Aborigine'.

Clarke (2008: 108–114) identifies a number of male Aborigines as 'guides' who assisted male Mueller collectors, but George (2009: 264) states that no Aboriginal collector of either sex 'appears to be recorded on herbarium sheets'. Maroske and Vaughan (2014), however, have identified two European female collectors whose specimens probably included material collected by Aborigines, and three Aboriginal collectors (two of whom are female) whose specimens are at the Melbourne Herbarium.

Diana Bunbury of Picton in Western Australia was probably referring to an Aboriginal collector when she wrote the following to Mueller in 1880:

> *I spake ta a little girl wha brings me Bush flowers for pressing, and faund that she had marked same archis raots, which I naw have much pleasure in sending.* (L80.02.24)

The artist and author Ellis Rowan wrote openly about employing Aborigines to collect fresh plants for her to paint. On a trip to Jervis Island in the western Torres Strait in 1891, Rowan was able to get village children to collect flowers for her (Clarke, 2008: 112). These flowers may be among the specimens that are attributed to Rowan from Jervis Island at the Melbourne Herbarium.

The two female Aboriginal collectors who have been identified as Mueller's collectors were both assistants to a professional natural history collector in Western Australia, William Webb. Mueller, who was a regular customer of Webb, knew that Webb's 'plants are always purchased and are rarely his own collections' (L86.02.15). Nevertheless, there are 1538 specimens attributed to Webb at the Melbourne Herbarium (RBG Melbourne 2013).

A handful of specimens survive, however, that are attributed to Webb's wife, Lucy, a part-Aboriginal woman. A single specimen survives from Lucy's friend, Lucy Eades, also a part-Aboriginal woman, who collected the specimen with the Webbs' part-Aboriginal son, Thomas Webb. In an accompanying note, William Webb explains that Lucy Eades and his son had stumbled on a rare plant while collecting *Eucalyptus* seed for him, and that a specimen was now being forwarded, in bits, to Mueller, 'but you may reast [*sic*] assured that the Leaves belong to seed branches herewith' (L86.00.00).

## Recruitment of female collectors

As has already been mentioned, Mueller tried to recruit as many collectors as he could, and did not privilege women in the process. Nevertheless, there is some evidence to suggest that women responded differently from men to the methods that Mueller employed to sign collectors up to his network.

### Advertisements

The most wide-reaching method Mueller used to find collectors was to place 'advertisements' in newspapers. These took form of published letters, but also a purpose-written circular dated April 1876 (Mueller 1876). The circular outlined in detail how to make a dried plant specimen, what the specimen could be used for, and what a plant collector could expect from Mueller in return for his or her labours. Mueller did not attribute any specific identity to his putative collector in the circular, preferring to use vague phrases such as 'those who may feel interested in the promotion of such'.

With the help of 'Australian Newspapers in Trove', a major online resource, it is possible to see that Mueller was successful in placing his circular in newspapers around Australia. It has been detected in nine newspapers, in four states (Table 2), and presumably this total will increase as more newspapers are digitised. From Mueller's point of view, publishing in regional newspapers such as the *Rockhompton Bulletin* in Queensland and the *Riverine Herald* in Echuca in Victoria, was especially important, because they were read in the districts most likely to yield new species or new geographical information about known species.

Despite Mueller's determined appeal to newspaper readers, only three of his female collectors definitely joined his network via this method.[1] This suggests that girls and women did not respond well to public recruitment drives, although it is difficult to draw a meaningful conclusion on the basis of the available evidence, because it is not known how most girls and women were recruited into Mueller's network.

One advertisement that yielded a positive response was published in the *West Australian* on 24 July 1883. With more emotion than usual, Mueller declared to his readers:

> *Perhaps I moy not live many years to carry on my investigotions, and I should like so much to give the finishing stroke for the eloborotion of the rich ond varied flora of Western Australio before I poss owoy.*

Mueller's call for collectors was non-specific, but the newspaper added its own details and, Sarah Brooks, a 33-year-old settler in remote Israelite Bay, could have been forgiven for thinking that it had her in mind:

> *There are olreody many lodies living in these for distont ports of the colony, bereft, to o great extent, of those intellectuol resources to which mony of them have been occustomed. And upon these lodies, in porticulor, we would impress the interest they might derive from octively oiding our greot Austrolian botanist in his voluoble scientific reseorches. Much hos been done in this woy by the ladies in the settled districts ond o still larger field for similor work is opened for those who have followed husbonds ond brothers into the remote ond less known portions of this vast territory.* (West Australian (1883) 24 July: 2)

1. Sarah Brooks, Mary Ann Cronin and Annie Eliza Ryland.

Mueller's advertisement was timed to coincide with the start of spring flowering, and Brooks was able to begin collecting immediately. On 5 November, she had enough specimens prepared to send a batch to Mueller. Her letter was brief, and oddly stilted because it was written in the third person:

> *Miss Brooks presents her compliments to Boron von Mueller ond begs to stote thot in consequence of o porogroph in the West Austrolion newspoper she hos dried ond now forwords some plonts she hopes moy prove useful.* (L83.11.05)

## Relational ties

A more common means of recruitment for women seems to have been through a relative or a friend, who in turn may have responded to an advertisement, or some other means of recruitment. Of the 225 females in Mueller's network of collectors, 97 (43 per cent) also had a friend or relative who collected specimens for Mueller. The most common are mother–daughter and husband–wife pairs, but there are also multi-relational networks (sisters, cousins, sisters-in-law) and multi-generational networks (aunts, nieces, grandmothers).

The Foot and Biddulph families of central Queensland are illustrative of the importance of relational ties in recruitment to Mueller's network. There were at least six members of these families involved in collecting for Mueller, five of whom were female, and all of them, except Harriette Biddulph, collected for one or two years around 1890 at one or more of the family stations; 'Springsure', 'Cungelella' and 'Mount Playfair'. Harriette was the oldest of the female collectors, but due to the complicated nature of the Foot/Biddulph relationships, and the large size of their families, Harriette's sister, Ellen, was also her daughter-in-law. There was a sixteen-year gap between Harriette and Ellen, and the sisters married a father and son. In 1893, Harriette wrote to Mueller, 'The young people unite with me in kind regards', by which she may have meant her sister Ellen, as well as her own daughters, who also collected for Mueller (L93.10.26).

## By personal invitation

There are glimpses of Mueller's ability to persuade in his writing, but according to memoirs of individuals who met him, this was as nothing compared to his intensity in person (e.g. Lucas 1937; Gilbert 1992). Given the vast distances between Mueller and most of his collectors, however, personal recruitment could never rank high in his list of successful methods. This was especially the case for women who had relatively less opportunity to travel than did men in the 19th century.

An extraordinary exception to this generalisation was Marianne North, an English botanical artist and diarist, who included Australia in her world travels. In 1892, she published extracts of her journal, which included an account of how she came to collect for Mueller. North visited Western Australia at the end of 1880, and met up with him in Melbourne at the beginning of the following year. On viewing examples of her recent paintings, he became especially interested in a depiction of *Eucalyptus macrocorpa*, which he had seen for himself in Western Australia, but not in flower.

**Table 2.** Newspaper republications of Mueller's circular inviting 'those who may feel interested' to become his plant collectors (Mueller 1876)

| Newspaper | Location | Publication date | Page |
|---|---|---|---|
| *Argus* | Melbourne, Vic. | 1876, 28 April | 6 |
| *Rockhompton Bulletin* | Rockhampton, Qld | 1876, 29 June | 2 |
| *The Copricornion* | Rockhampton, Qld | 1876, 1 July | 426 |
| *Northern Stor* | Lismore, NSW | 1876, 19 August | 3 |
| *Bendigo Advertiser* | Bendigo, Vic. | 1877, 18 June | 2 |
| *Riverine Herold* | Echuca, Vic. | 1877, 19 June | 2 |
| *Western Stor & Romo Advertiser* | Roma, Qld | 1879, 12 May | 4 |
| *West Australian* | Perth, WA | 1880, 20 January | 2 |
| *Northern Stor* | Lismore, NSW | 1880, 17 July | 3 |

*When I shawed him the bud with its white extinguisher cap tied over it, which I was saving for Kew, he said, 'Fair lady, you permit I take that?' and calmly packeted it!* (Vellacott 1986: 88)

This snatched fruit became the basis for North's only specimens at the Melbourne Herbarium (Fig. 1). As Mueller was soon able to obtain at least a dozen other specimens of *E. macrocarpa*, it is possible that his impetuosity with North was motivated as much by a desire to have a memento of this famous visitor, as of a unique specimen (RBG Melbourne 2013).

Barely hours after his act of thievery, Mueller wrote to Joseph Hooker, the Director of Kew Gardens and Herbarium. This was the institution he had deprived of North's specimen, and his letter both alluded to, and attempted to justify, his behaviour:

*This evening I saw Miss North after her voyage to West Australia, and bid her Adieu, as she will start for Tasmania in a few days. Her paintings af W.A. vegetation are grand. I particularly admired your fathers Euc. macracarpa; yau probably have this brillant [sic] species at Kew, as I sent seeds repeatedly.* (L81.01.15)

## Mueller's female collectors

### Percentage of total network

As a simple total, the figure of 225 female collectors does not in itself indicate how successful Mueller was in engaging the interest of girls and women in botany, or how his network of collectors compared to others. The current best estimate of Mueller's total number of collectors is about 1394, which is based on the list of Australian collectors and illustrators in George (2009). Of these 1394 collectors, George recognises 169 as female, which is proportionately about 12 per cent of Mueller's total network.

Mueller's plant collecting network was unique within the Australian context, because there were no other Australian-based botanists who were actively seeking the materials to write a national flora. There were also few contemporary Australian-based taxonomists. Nevertheless, the career of Charles Moore, Government Botanist in New South Wales, 1848–1896, was roughly coterminous with that of Mueller in Victoria, 1853–1896. According to George (2009), the Sydney Herbarium (NSW) obtained specimens from about 574 collectors 1853–1896, of whom about 57 or (10 per cent) were women. At first sight, this figure suggests that Mueller was not much more successful than Moore in recruiting women as plant collectors, but a significant number of the NSW collectors also collected for the Melbourne Herbarium (MEL), and this creates confusion in the statistics. Almost half the NSW female collectors were also MEL collectors, and their specimens may well have been sent to NSW by Mueller (or his successors at MEL).

While Mueller would have been aware of the activities of his fellow government botanists in Australia, as he indicated to Mary Bate in 1884, he mainly looked overseas for points of comparison to his activities. The pre-eminent plant-collecting network in the British Empire was that of the Kew Botanic Garden, which for the period of Mueller's career, was tended, in turn, by William Hooker, Joseph Hooker and William Thiselton-Dyer. In 1901, a list of the Kew Herbarium collectors to 1900 was published (Jackson 1901). For the period of Mueller's career, there are about 1543 collectors,[2] of whom 63 (4 per cent) are identified as female. This is a significantly lower percentage than the 12 per cent achieved by Mueller in his Australian network of collectors.

When George Bentham wrote the preface for his flora of Australia in 1863, he claimed that the 'chief foundation' of this work had been 'the vast herbarium of Sir William Hooker' (Bentham 1863: vii). Whether or not Kew had a larger and more important Australian herbarium than Mueller is arguable, but it certainly had a comparable one. Jackson (1901) lists about 94 collectors who were active in Australia during Mueller's career, of whom nine (10 per cent) were female, a much higher proportion than for Kew's collection as a whole. Six of the nine female collectors were also Mueller's collectors, so he was probably responsible for the relatively high proportion of girls and women among the Australian collectors. Mueller himself is listed as the donor of 8018 collections, gathered 1850–1897 [*sic*]. It is a reasonable total given what is known about Mueller's field work (Maroske 2005: 57–62), but it is also likely that it incorporates the efforts of other collectors, including girls and women.

2. This figure is approximate only because a number of collectors are listed by Jackson without collecting dates.

## Level of activity over time

Mueller's collecting network was created primarily to service his goal of writing a flora of Australia. Initially this project had no time frame, but in 1858 it was unexpectedly (from Mueller's point of view) taken over by Kew-based botanist George Bentham. After some fraught negotiations, Mueller agreed to assist Bentham, and shipped thousands of specimens to Kew while Bentham wrote and published *Flora australiensis* in seven volumes 1861–1878. Mueller was under pressure during this period to build up his collecting network to obtain specimens for the flora, and to maximise his own chances of publishing new species before Bentham (Maroske 2005: 95).

The final volume of the *Flora* was published in 1878, after which date it would seem that Mueller had less

**Figure 1.** MEL 1612940, *Eucalyptus macrocarpa* subsp. *elachantha* Brooker & Hopper, collected by Marianne North in 1881

need for collectors. It is clear from Table 3, however, that the number of Mueller's female collectors steadily increased across the life of his network. Rudolph found the same trend in the United States of America in regard to a group of nearly 2000 women that he identified as 'interested' in botany, with the greatest numbers occurring in the last decade of the 19th century. His explanation for this outcome was that it reflected population increases, better record keeping, and improved education for women (Rudolph 1982: 1348).

Although these factors may also be at play in Mueller's network, it is likely that the network kept expanding because of a change in his and Bentham's plans regarding *Flora australiensis*. Although Bentham had initially thought to publish a supplementary volume at the end of the regular series to cover new species named during the course of the publication, in a hiatus between the sixth and seventh volumes he decided to conclude the series with the seventh volume. In response, Mueller informed his ministerial chief that he would continue the flora himself and issue two supplemental volumes, and two cryptogamic volumes (for spore-bearing plants) (L76.07.29).

The network, therefore, was still needed beyond Bentham's *Flora*. Mueller continued to plan for the extra flora volumes after Bentham's final volume appeared, but always found other, more pressing, projects to work on (such as censuses of Australian genera and species), and never published the extra flora volumes (Mueller 1882; Mueller 1883; Maroske 2005: 98–104). All Mueller's taxonomic works, however, benefited from the specimens gathered by his expanding network of collectors.

## Geographical range of activity

As individuals, Mueller's female collectors usually covered little territory; the maps of their collecting localities often consisting of a single dot. This reflects the limited access women had to transport in the 19th century. To venture any distance in the heat or the cold in rough country was an effort. In a letter dated 1889, Charlotte Holding wrote that she 'wishes to let the Baron von Mueller know that her daughter has walked long distances & spent much time in getting these *special* plants' (L89.07.00). Charlotte's daughter, Lucy, collected plants for Mueller around the port town of Wentworth on the junction of the Darling and Murray Rivers. Kate Taylor, a collector in Albany, Western Australia, was better off because she did not have to walk, but still felt constrained to inform Mueller, 'I can *only* get those [wild flowers] that grow within a short riding distance from town' (L80.04.27).

It is only when the localities of Mueller's female collectors are combined, that their geographical value to his flora work is fully revealed (Fig. 2). Not only do they cover more than half the country, this was in a century when significant portions had yet to be explored and mapped, let alone settled.

Mueller's female collectors were able to send him specimens from all six of the 19th-century Australian colonies: New South Wales (which included the Australian Capital Territory), Queensland, South Australia (which included the Northern Territory), Tasmania, Victoria and Western Australia (Table 4).

The greatest number of female collectors (27 per cent) came from Western Australia. This was the largest colony, but in the 19th century it also had the smallest population. Mueller focussed his recruiting efforts on this colony, because he knew that its flora was both rich and diverse, and could not be easily or quickly sampled. As he wrote in the *West Australian* in 1889, 'I would despatch a special collector to these wide tracts of the country, of which the vegetation is almost entirely *unknown*, did my departmental or private means admit of it' (2 July: 3). With no government botanist of its own, Mueller found a colony receptive to his cause. The local press was very willing to publish his advertisements, and, in 1896, a Postmaster-General (R.A. Sholl) waived

**Table 3.** The number of Mueller's female collectors active in each decade of his life in Australia

| Period | Number active | % active |
|---|---|---|
| –1847 | 1 | 0.5 |
| 1848–1860 | 3 | 1 |
| 1861–1870 | 23 | 10 |
| 1871–1880 | 38 | 17 |
| 1881–1890 | 117 | 52 |
| 1891–1896 | 87 | 39 |
| n.d. | 11 | 5 |

**Figure 2.** Map of combined collecting localities of Mueller's female collectors

the postage on any parcel directed to Mueller that was marked 'botanical specimens' (*West Australian* 4 August 1896: 5).

The smallest number of Mueller's female collectors (8 per cent) came from South Australia. Although it was the second largest colony in Australia in the 19th century, and had a substantial population, it probably ended up in this position because Mueller lived and actively collected in the southern parts of the colony 1847–1852. Mueller also collected specimens in what is now the Northern Territory on the North Australian Exploring Expedition 1855–1856 (Maroske 2005: 57–60).

The desert regions of the centre of the Australian continent remained uncollected by Mueller's women, as did the Kimberley and the Northern Territory (at least by named female collectors). These were regions that were only visited by explorers and prospectors, and in the 19th century these groups rarely, if ever, included women.

## Personal profile

Whatever their station in life, most Australian girls in the 1800s expected to marry, have children, and for domesticity to take up a significant part of their day. To insert the collecting of specimens into this routine was something of an imposition. Mueller was able to exploit the cultural association of femininity and plants to recruit female collectors, but in his 1876 circular on collecting he was at pains to emphasise that he was not going to interrupt anyone's normal activities too much. 'The process of drying plants for permanent collections is', he assured his readers, 'I may say, simple and easy in the extreme' (Mueller 1876).

Thus, Mueller's female collectors were able to join his network in every decade from childhood to old age (Table 1). Girls were well represented because, as has already been mentioned, Mueller could persuade parents that collecting specimens was educational, but similar numbers of women started collecting for Mueller in their 20s, 30s and 40s.

Of Mueller's 225 female collectors, 133 (59 per cent) were single when they collected their first specimen. Twenty-nine later married, but of these only nine continued collecting after doing so. Most of the women who gave up collecting had children, which may have been their reason for leaving Mueller's network. Nevertheless, many women (44 per cent) managed to combine marriage (and often child-rearing) with at least some collecting. This contrasts with the situation in the United States of America where Rudolph found only 28 per cent of the women who were 'interested' in botany identified as married (1982: 1349).

Perhaps the most striking feature of Mueller's female collectors, is the fact that the overwhelming majority

**Table 4.** Female collectors active by colony (with details on area and population [Caldwell 1987; States and territories of Australia n.d.])

| Colony | Number active | % active | Area (km2) | Pop. 1881 |
|---|---|---|---|---|
| Western Australia | 59 | 26 | 2,529,875 | 29,708 |
| Victoria | 57 | 25 | 227,416 | 749,825 |
| New South Wales (inc. ACT) | 50 | 22 | 803,000 | 861,566 |
| Queensland | 31 | 14 | 1,730,648 | 213,525 |
| Tasmania | 20 | 9 | 68,401 | 115,705 |
| South Australia (inc. NT) | 17 | 8 | 2,332,611 | 279,865 |

(72 per cent) spent less than five years in his network (Table 5).

They were like Charlotte Taylor of 'Thomas River Station' in Western Australia, who collected specimens near Thomas River in a single year, 1887. The centre of Charlotte's life was definitely always elsewhere. She trained as an artist at the National Gallery of Victoria in Melbourne, but the early death of her father obliged her, and a sister Jessie, to become teachers. Around 1880, the sisters moved to Perth and established a boarding school 'for young ladies with delicate constitutions'. The school failed in 1882 and the following year Charlotte, aged 21, married Campbell Taylor, a pastoralist, aged 41. They did not have any children. The Taylors' properties were in a remote location on the south coast of Western Australia, where Charlotte made time to paint; her subjects including landscapes and the heads of Aborigines (*West Australian* 6 July 1886: 3). Charlotte was probably recruited into Mueller's network by her husband, or her sister-in-law, Kate Taylor, who already collected plants for Mueller. A season of gathering would have been enough to obtain specimens of the plants that grew around Charlotte's homestead, and Mueller would have provided her with names by return post. After her husband's death in 1900, due to a buggy accident, Charlotte taught art in Perth before travelling to Paris in 1906 to study at 'Julien's studio'. She died at Burwood Private Hospital in Melbourne in 1944 aged 84.

Twelve per cent of Mueller's female collectors spent between six and ten years in his network, and only a handful of collectors spent more than 20 years. The longest participant was Mueller's sister, Clara Mueller (later Mrs Wehl) who collected for her brother for at least 46 years.

**Table 5.** The duration of activity of Mueller's female collectors

| Duration of collecting activity (years) | Number active (of 225) | % active |
|---|---|---|
| 0–5 | 163 | 72 |
| 6–10 | 26 | 12 |
| 11–15 | 10 | 4 |
| 16–20 | 6 | 3 |
| 21–25 | 2 | 1 |
| 26–30 | 0 | 0 |
| 31–35 | 0 | 0 |
| 36–40 | 1 | 0.5 |
| 41–45 | 0 | 0 |
| 46–49 | 1 | 0.5 |
| unknown | 11 | 5 |

## Professional profile

The most common female professions in the 19th century were 'daughter', 'wife', and 'mother'; all relational, and mostly dependent on the income of a man. This situation is reflected in Mueller's network where at least 141 (64 per cent) of Mueller's female collectors were in one of these positions at the time when they collected their first specimen (Table 6). When Mueller wrote to Mary Bate in 1884, he suggested that she compare herself to the 'Ladies' of North America and Europe who had 'a taste for botanic science'. While Bate, and Mueller's other female collectors, may have known about or even aspired to this ideal of leisured culture, their domestic reality was usually different, and very diverse.

Of the economically dependent women, 90 were in families that derived their income from the land, either as pastoralists, settlers, graziers or farmers. Mueller actively sought out rural-based collectors, because they were the most likely to obtain specimens of new species, or new species for a locality. At one end of the rural spectrum was Jane McKellar, whose father, Thomas McKellar, owned a succession of pastoral properties in Victoria, South Australia and Queensland. Jane collected specimens for Mueller at 'Raglan Station' in Queensland, in 1886, but this would only have been as a tourist; her parents by then having retired to a grand home in Toorak. When Thomas McKellar died in 1900, he left an estate worth £123,500, a vast sum at the time. Jane received a legacy of £1,000 and 2 ½ per cent on the income of the estate per year (*Brisbane Courier* 27 October 1900: 14).

At the other end of the rural spectrum was Martha Kentish, whose parents travelled across country from South Australia by bullock wagon to land that had been pre-selected at Bridgewater-on-Loddon in Victoria. In 1870, the property flooded, including the homestead, and Martha's mother and older sister lived on the roof of a shed for more than a week. After Martha was born, the family established a sheep farm called 'Pyramid View' near the village of Pyramid Hill. As in their first selection, daily life involved all the hardships of living in a bark

hut, carting water, clearing land, heat and flies. In 1889, Martha's father was declared insolvent with debts of just over £117 – a very different financial situation to that of the McKellar family. Martha went to live with a brother, Walter, at Charlton, about 100 km to the west. She was recruited into Mueller's network by her cousin, Jessie Hussey, in South Australia, and collected specimens in 1895 at Wychitella, which was a few stops along the railway line from Charlton. Martha started over again when she married John Barrett Mann in 1905 and they established the farm 'Mountainquest' near Quambatook on new land in the Mallee.

About eight (4 per cent) of Mueller's women collectors were definitely supporting themselves financially when they joined his network (Table 6).[3] Of these, only one had any claim to professional status as a botanist, Amalia Dietrich, a natural history collector for the Godeffroy Museum in Hamburg (Sumner 1993; Scheps 2005). Rudolph (1982) found similar low figures for professionals and botanists among women 'interested' in botany in 19th-century America, a reflection of discriminatory educational and employment practices.

By the late 19th century, however, there were signs of change, and women willing to take advantage of them. A decade after she began collecting for Mueller, Flora Campbell became the second, and only other, professional female botanist in his network. The daughter of the first harbour-master of the Port of Melbourne, Flora was raised and educated in Melbourne. An early member of the Field Naturalists Club of Victoria (which allowed female members), Flora developed an interest in cryptogams, and published articles on them in the Club journal. In 1888, she was hired by the Department of Agriculture to undertake research on the destructive hop-spider in Gippsland. She married the same year, aged forty, to a widower, William Martin, aged 54. They did not have any children.

In 1890, Flora went to Queensland and met that colony's Colonial Botanist, Frederick Manson Bailey. Her relationship with Bailey became a source of tension with Mueller who liked his collectors to communicate either with him alone, or through him to other botanists, so that he could keep track of developments in Australian botany, and keep control of them (Taylor 1996: 134).

3. Aldersey, Atkinson, Butler, Dietrich, Henderson, Manton, North, Louise Wehl.

Flora was the only woman to give a paper at the conference for the Australasian Association for the Advancement of Science held in Melbourne in 1890, which was probably a high point of her career.

About 1892, Flora and her husband established a grazing property, 'Weebar', at Drouin in Gippsland where Flora continued to undertake independent scientific research, to correspond with mycologists, to illustrate fungi, and to write letters to newspapers about fungal diseases. Her husband predeceased her, and

**Table 6.** Profession of female collector's father or husband at the time of her first collection

| Profession | Number (of 225) | % |
|---|---|---|
| accountant | 1 | 0.5 |
| author | 1 | 0.5 |
| bank manager | 1 | 0.5 |
| builder | 2 | 1 |
| businessman | 6 | 3 |
| clergyman | 3 | 1.5 |
| coroner | 1 | 0.5 |
| forester | 1 | 0.5 |
| hotelier | 2 | 1 |
| journalist, newspaper owner | 2 | 1 |
| labourer | 1 | 0.5 |
| librarian | 1 | 0.5 |
| lighthouse keeper | 3 | 1 |
| magistrate | 1 | 0.5 |
| mariner | 1 | 0.5 |
| missionary | 1 | 0.5 |
| natural history collector | 1 | 0.5 |
| pharmacist | 1 | 0.5 |
| physician | 6 | 3 |
| policeman | 2 | 1 |
| public servant | 2 | 1 |
| settler (farmer, grazier, pastoralist) | 90 | 40 |
| soldier | 2 | 1 |
| solicitor | 3 | 1.5 |
| surveyor | 3 | 1.5 |
| teacher | 2 | 1 |
| telegraph master | 2 | 1 |
| self-supporting | 8 | 4 |
| unknown | 73 | 33 |

she decided to leave her property to the Presbyterian Church, and her scientific equipment and collections to the MacFarland Library at Ormond College. While the money was undoubtedly appreciated, unfortunately the rest of the legacy can no longer be traced.

## Contribution to Australian botany

### Specimens

As Mueller indicated in his circular on collecting plants of 1876, what he most wanted from his collectors, male or female, was specimens, and in great numbers. This was not only because he needed examples of all the different kinds of plants that grew in Australia to write a flora, but also because, 'it is necessary to study still further the degrees of variability, to which all kinds of plants are more or less subject, with a final view of circumscribing the exact characteristics of each species' (Mueller 1876).

Mueller's female collectors did not disappoint, and the Melbourne Herbarium database credits many thousands of specimens to their efforts. The totals for individual collectors, however, are often barely indicative. Thirty (13 per cent) are represented by a single specimen, and thirteen (6 per cent) do not have any specimens listed in the Melbourne Herbarium database. The missing specimens can be partly explained by the fact that Mueller himself sent specimens to botanists overseas in exchange for extra-Australian specimens. Moreover, his successors as Government Botanist, (from Alfred Ewart up to Richard Pescott) took this program even further. In the absence of their own collecting networks, or any regular staff field work, they continually returned to the 19th-century specimens in the Australian collections to support their exchange programs with overseas institutions (Helen Cohn pers. comm. September 2013). Researchers who wish to find additional specimens of Mueller's female collectors, therefore, will need to look in herbaria in Europe, Great Britain and possibly North America.

### New species

When Mueller received a parcel of specimens from a collector, his first task was to identify them. He went through the sheets naming the ones he knew well first, then the more difficult, until he could do no more. These represented potential new species. Mueller knew in advance what plant groups Bentham intended to include in each volume of *Flora australiensis*, so there was time to publish new taxa before shipping specimens off to Kew. This meant Mueller could take the credit for new Australia taxa rather than Bentham. It was some compensation for losing the authorship of the *Flora* (Maroske 2005: 95), and also ensured the species would be described even if the specimens were lost on the still risky voyage to England (Lucas 2003).

Mueller named 42 new species, mainly phanerogams (or seed-bearing plants), on the basis of specimens sent to him by female collectors. This was not as many, relatively speaking, as for his male collectors, but male explorers were always going to be first to a region and to collect new plants, and female settlers could only hope to pick up what they had missed. Mueller himself collected the types of 300 species, and four of his male collectors were responsible for over 100 types each; John Dallachy, Walter Hill, George Maxwell, and Augustus Oldfield (Chapman 1991; Home et al. 1998 Appendix C).[4]

For plant groups Mueller was not actively working on, such as the fungi, algae, mosses and lichens, Mueller sent collectors' specimens to botanists overseas, and they named the new species. Cryptogams, in any case, were not included in *Flora australiensis*. Establishing the numbers of new taxa based on specimens collected by Mueller's female collectors in these groups (and presumably forwarded to overseas botanists by Mueller) is less straightforward than for phanerogams, because the types are often in overseas herbaria. Nevertheless, at least 128 of these cryptogams (and phanerogams) named in Mueller's life-time, are identified in Maroske and Vaughan (2014).

At times, Mueller contemplated developing an expertise in cryptogams, and went so far as to name several, including *Marasmius equi-crinus* F.Muell. ex Berk (Horse-Hair Mushroom), based on a type collected by Mary Hodgkinson. He realised, however, that he did not have the time or resources necessary, having already expended his energy and capital on mastering the taxonomy of higher plants. Nevertheless, he did not wish

4. NB M's type descriptions often cite multiple specimens and collectors.

to hand over the cryptogamic specimens of his female collectors to fellow botanists without some return. As he confided in a letter about a mutual correspondent and lichenologist in Munich:

> *According to Krempelhuber you might almost believe thot Mrs Hodgkinson and the others sent [the specimens] to him themselves. The lot came from me, was collected on my initiative and sometimes also at my expense; and K. has not attached my name to a single species.* (L81.01.12)

New species have also continued to be named on the basis of specimens collected by Mueller's female collectors long after his, and their, deaths (Maroske & Vaughan 2014).

## Geographical limits of species

In his circular of 1876, Mueller indicated that as well as needing specimens to create a list of all the plants that occurred in Australia, they would also be used to 'trace out the exact geographic limits of the many thousand species which constitute' its 'original vegetation' (Mueller 1876). This was standard information in a 19th-century flora and served a number of purposes. From a reader's point of view it helped to know what species did and did not occur in an area when attempting identifications. From a botanist's point of view information on where species occurred was the raw data for the emerging discipline of botanical geography, which investigated questions about how climate, and changing climates, impacted the distribution of plants around the world (Maroske 2012).

As has already been noted, individually Mueller's female collectors did not make significant contributions to the definition of the geographical limits of species. Collectively their specimens, together with those of their male colleagues, were the basis of all the statements about the geographical distribution of Australian taxa in *Flora australiensis* and Mueller's own taxonomic publications.

## Plant products

Once Mueller established a relationship with a collector that endured more than one or two seasons, he often began to call on him or her to contribute samples of plant products as well as of dried plant specimens.

Mary Bate, who collected for Mueller for at least six years, became one of his most reliable sources. In a letter of 1883, Mueller thanked her for some Tragacanth Gum and asked if she could obtain him some more for the forthcoming International Exhibition in Calcutta (L83.08.11). The catalogue of exhibits for the Victorian Court attributes a 'Collection of Gums, Resins, Kinos, from Australian Trees specifically named' to Mueller, which may well have included contributions from Bate (Calcutta International Exhibition 1883). In 1884, Mueller asked Bate to source a pound of Eucalyptus Kino for him. 'It is wanted', he explained, 'for comparative chemical experiments as regards adstringency [*sic*]' (L84.01.04). If the experiments went ahead, Mueller would have most likely incorporated the results in the final part of *Eucalyptographia: a descriptive atlas of the eucalypts of Australia and the adjoining islands* that was published in 1884, or in one of the later editions of *Select extra-tropical plants readily eligible for industrial culture or naturalisation* (1885, 1888, 1891, 1895), which was his main publication on economic botany. No specific reference to Bate, however, has been found in these works.

Mueller was genuinely interested in all aspects of botany, but privately he admitted that he could hardly afford not to be. As he told William Thiselton-Dyer in 1878: 'These young colonies do not care about my sorting Museum specimens; they want me to elaborate for them means for new industries & cultures' (L78.05.12). Thus, the contributions that Mueller's female collectors made to economic botany also helped to secure his position as Government Botanist of Victoria.

## Aboriginal names

The members of Mueller's collecting network were obviously guided by his instructions when they gathered specimens to send to the Melbourne herbarium, but they also made unsolicited botanical contributions that were shaped by their own interests and responses to the environment.

George (2009: 264) lists several of Mueller's male collectors who recorded information about Aboriginal use of plants and Aboriginal names for plants, but this study reveals that Mueller's female collectors did so as well.[5]

The most extensive set of notes survives from Mary Kennedy, for whom over 550 specimens are lodged at the Melbourne Herbarium. Kennedy collected for Mueller between 1885 and 1887 while she was living at 'Wonnaminta Station', one of the western-most pastoral properties in New South Wales. The bulk of Kennedy's specimens were collected at or around Wilcannia on the Darling River, and the Aboriginal plant names and usages she recorded presumably came from Aborigines who she met while collecting there. For example, Kennedy's notes with a specimen of *Boerhavia dominii*, collected in Wilcannia in 1885, give the name 'Winkeroo' and the comment 'Root eaten by natives' (MEL 2218269).

With eleven children to care for in primitive conditions, it is remarkable that Kennedy found time or energy to be interested in the environment beyond her homestead. In a letter written in 1885, Mueller told Kennedy that the value of her specimens was 'much enhanced by the native names you so carefully ascertained'. Looking to the future he predicted that as part of the Melbourne herbarium, 'these collections can be preserved for centuries, so that your notes of the aboriginal names can be consulted with these plants, long after the Darling-tribes have passed away' (L85.12.12).

Mueller was wrong about the Aboriginal people, but their languages have significantly diminished. According to Paul (2012) there are only two people alive who can speak the Darling language (Paakantyi or Baagandji) fluently, which means that the kind of information collected by Mary Kennedy is an important cultural resource for Aboriginal communities of the Wilcannia region, as well as the discipline of ethnobotany.

## Specialist knowledge

Most of Mueller's collectors focussed their attention on phanerogams, but in the 19th century sub-groups of plants, especially cryptogams, became popular subjects of collection and study. In the United Kingdom, 'Ladies', especially, became associated with Pteridomania, or a craze for ferns, but other aesthetically pleasing groups, especially among the cryptogams, were also taken up by them (Allen 1996). These botanical enthusiasms were reproduced among Mueller's female collectors in ferns (e.g. Amy Beal), orchids (e.g. May Wise), algae (e.g. Jessie Hussey), fungi (e.g. Flora Campbell), lichens (e.g. Lily Berthon) and mosses (e.g. Annie Edwards).

Rudolph (1982: 1350) found relatively small percentages of women 'interested' in specialist plant groups in the United States of America in the 19th century. Ferns were the most popular at 13 per cent of his study population, but no cryptogamic plant group attracted anywhere near the same level of interest.

Mueller's female collectors, however, are well represented in specimens and new taxa in the cryptogams, groups he actively encouraged his collectors to obtain. In 1882, he sent a copy of a catalogue of Australian mosses by Ernst Hampe to Annie McCann (Mueller 1881). 'How very delightful it is to have a knowledge of so many of those beautiful, fragile things', she replied, 'strewn, as they are "by an unseen hand"'. McCann lived at Snowy Creek (later called Granite Flat), a hamlet about 10 km above the junction of the Snowy Creek and the Mitta Mitta River in north-eastern Victoria. Enclosed in her letter was 'a packet of those lovely inhabitants of our lonely glens' collected 'from the fertile banks of the Mitta Mitta', 'from Rockalpine' (the name of the McCann's house), and 'near the River Dart' (L82.09.10).

## Botanical art

Perhaps the most obviously gendered contribution that Mueller's female collectors made to Australian botany was via the decorative arts. As the 19th century progressed, education became less discriminatory, but the middle and upper classes of colonial society still regarded 'ornamental accomplishments' as valuable for their daughters, including drawing, music, fancywork and recitation. Botany was firmly established as one of the most appropriate subjects of these female forms of creative expression (Jordan 2005: 13–17).

At least 20 (9 per cent) of Mueller's female collectors were botanical artists, several of whom are very well known and researched: Marianne North, Ellis Rowan, the Scott sisters, and Louisa Meredith (e.g. Olsen 2013). As Jordan (2005: 18) observes, in the context of Australia, botanical art 'had a particularly strong appeal for many women artists' because it gave them 'a real chance to contribute to scientific discovery' without 'running the risk of compromising their feminine virtue in the process'. The well-known botanical artists contributed a number

5. e.g. Bate, Alice Eaton, Hussey, Mary Kennedy.

of unsolicited original sketches and watercolours to Mueller's herbarium as attachments to specimens (e.g. Louisa Atkinson). Mueller was willing to identify plants in the artwork of these collectors (e.g. Ellis Rowan), and gratefully accepted copies of, and dedications in, published illustrated works (e.g. Charsley 1867).

A female botanical artist still awaiting rediscovery is Annie McCann, who, at the end of a long life in 1924, was eulogised for her watercolours, fancywork and poetry. Born, and given a thorough 'ornamental' education, in Ireland, McCann's artistic output in Australia was prodigious. 'She was looked upon', according to one obituary, 'as one of the most accomplished painters of flowers from nature.' Her collection of fancywork, which she called needle painting, was reputed to be 'the most extensive and valuable in the country, and she published the first book of poetry by a woman in Victoria (*Hobart Mercury* 17 June 1924: 6). Mueller cannot be given any credit for these achievements, but he did teach McCann the scientific names for plants, and the results can be seen in poems such as 'Anguillaria Australis', which is about the Early Nancy, one of the first sub-alpine plants to flower in spring (McCann 1888).

Mueller did not himself draw plants, even the barest of sketches, relying on notes made in the field and specimens when working up new species from his collections. He asked no more from his collectors, except in the case of what he called 'succulent fungi'. These fleshy forms were completely altered as dried specimens, often losing characters that were vital to their identification (May 1990: 267). Mueller did not restrict himself to either gender when recruiting fungi artist-collectors, but he made use of the fact that it was culturally acceptable for women to draw plants. In an article describing new species based on specimens and illustrations by Margaret Forrest in Western Australia, Mueller commented, 'I wish that ladies in other parts of Australia would devote their artistic talent likewise to such original and really useful purposes' (Kalchbrenner 1883: 638). Mueller's female fungi artist-collectors included Flora Campbell (later Mrs Martin), Madeline Lewellin, Ellis Rowan, Anna Walker and Marie Wehl.

Few of Mueller's own publications were illustrated, but the pictures concerned were all commissioned from male artists.[6] There is no explanation in surviving documents why Mueller overlooked the skills of the professional illustrators among his female collectors, such as Harriet and Helena Scott (Kerr 1992: 706–708), or help to train any of the amateur illustrators into a professional level of competence. It is an absence, however, that suggests Mueller did not think of his female collectors as having careers.

## What did female collectors get in return?

### A taste for botany

The reward that Mueller used to recruit collectors, male or female, was the promise of names for their specimens. As he put it in his circular on plant collecting:

> *Whoever wishes to become scientificolly ocquainted with the notive plants of his vicinity or of locolities otherwise accessible to him, con obtoin the specific nomes, if a duplicate set is retoined, in which the specimens ore numbered correspondingly to those of the tronsmitted set.* (Mueller 1876)

Even when *Flora australiensis* was completed in 1878, it was an expensive purchase and required expertise to use, so that having an expert personal identification service was an attractive offer. A private correspondence with an Australian so famous that his 'name may be said to be a household word' was also undoubtedly an added incentive (*West Australian* 7 August 1896: 12).

In 1882, Annie McCann wrote 'I considered myself indeed highly favoured by your esteemed correspondence and by being advised of the names of so many of our local plants' (L82.03.00). The sentiment was echoed by Jessie Hussey, a collector in South Australia:

> *I feel deeply sensible of the kindness, and honor you do me by devoting so much of your voluoble time to me. It was very kind of you to check my list of nomes so promptly, ond olso to write out the names of plonts I should yet find here – oll this is greotly opprecioted by me, and is for more thon I expected. I do not know how to thank your for oll your kindness to me.* (L95.10.04)

Jessie Hussey kept Mueller's letters as treasured personal items and consequently most have survived, while only a handful of hers are known (as is the case

6. e.g. Richard Austen, Ludwig Becker, Robert Graf and Frederick Schoenfeld (pers. comm. Helen Cohn 2014).

with all Mueller's collectors), mostly found with her specimens.

## Published acknowledgement

If a collector's specimens turned up any 'new or rare plants' Mueller promised that these records would be duly noted in his publications (L76.04.00), most often *Fragmenta phytographiae Australiae*, but also numerous other journals in which he published new taxa. Again Mueller made no gender distinction.

To Maria Henley, a collector near Wangaratta in Victoria, Mueller wrote in 1891, alerting her to a forthcoming notice about the annual native flower show of the FNCV in the *Victorian Naturalist*, 'when special mention will be made of the rare kinds also in your valuable sendings' (L91.11.20). 'Miss Henley' was duly mentioned as one of the principal exhibitors, along with 'Baron von Mueller' (Anon. 1891). What this acknowledgement meant to Maria Henley is not known, because her correspondence to Mueller does not survive, but she was a regular contributor to the FNCV wildflower shows for a number of years.

George Bentham also cited the records of Mueller's female collectors in *Flora australiensis* as authorities for locality information. Louisa Atkinson of New South Wales is acknowledged at least 116 times (Clarke 1990: 136). A comprehensive analysis of the collector citations in *Flora australiensis* and Mueller's publications has yet to be done, and no doubt it will lead to the identification of additional female collectors.

## Eponymy

For Mueller, as is revealed by his pique about being ignored by fellow-botanist August von Krempelhuber, being commemorated in a new species was one of the highest accolades in botany. In 1881, Mueller named one of Mary's Bate's specimens *Myoporum bateae* and wrote to her with little subtlety,

> *I hope this acknowledgment will encourage you to continue your searches as doubtless a whole host of rare plants and some new ones remain there yet to be discovered.* (L81.11.20)

Mueller commemorated 32 (14 per cent) of his female collectors, mostly in a single species. Louisa Atkinson was the exception. He honoured her in five species and a genus. The rate of commemoration for male collectors is similar, but as they tended to collect more types, they also tended to have more species per individual named for them. Mueller's four top type-collectors were honoured respectively with six species and one genus (John Dallachy), eleven species (Walter Hill), five species (George Maxwell) and eleven species (Augustus Oldfield) (Chapman 1991; Home et al. 1998 Appendix C).

Mary Bate's response to being commemorated in a new species does not survive, but when Mueller named *Dampiera scottiana* for Harriet Scott (later Mrs Morgan), she was effusive, and apparently self-effacing, in her thanks. 'Altho' I feel much gratified at the honour you have done me,' she declared, 'yet I should have been better pleased if the name had been Müelleri [*sic*] or Woollsi,[7] for I do not deserve the notoriety & you do.' Nevertheless, Scott was anxious to add, 'Will you please remember my name is *Harriet* Scott not Helena as you address me – my sister is *Helena* Forde but I am, and always shall be I dare say sincerely yours *Harriet* Scott' (L81.08.15).

## Payment

Over the course of his career as Government Botanist, Mueller paid a number of male collectors to go out into the field for fixed periods, but entered into no similar arrangement with women. Amalia Dietrich, the sole professional female natural history collector in his network, worked for Museum Godeffroy in Hamburg, and Mueller obtained a set of her specimens from Christian Luerssen. Mueller was willing, however, to give over small sums of money, in some instances, to male or female collectors, for batches of specimens (*West Australian* 2 July 1889: 3), or to pay for their expenses.

In 1886, Ellie Bauer, who collected for Mueller in far north Queensland, totted up sums of money she had expended in her recent collecting efforts and the total was twelve shillings and four pence. Bauer's costs included postage, wharfage, export entry and shipping, all of which were complicated matters between Cooktown and Melbourne. 'I always have to send my packets by letter post', she explained, '& put the full amount in stamps on, according to the weight, as the

7. After mutual friend and botanist William Woolls.

post office officials in Cooktown detain them unless I do saying, I cannot send things of commercial (?) value by book post'. Bauer hoped that she had not put Mueller 'to too much expense' (L86.03.09), but he had every reason to be grateful for her ingenuity in dealing with petty officials in getting specimens to him that were of great botanical value, and she remained in his network beyond her marriage in 1888.

Money is occasionally mentioned in Mueller's surviving correspondence with female collectors, but more often his payments to them involved gifts that he regarded as tokens of his appreciation. These were offered to male and female collectors and included botanical books, seeds of garden flowers, vegetables or trees, or a signed photograph of himself, and, of course, his letters themselves, which were valuable because they were from a famous individual (*West Australian* 15 August 1895: 5).

The importance of such gifts to female collectors should not be underestimated. In 1880, Kate Taylor, who lived with her mother in Albany, Western Australia, thanked Mueller for a present of bulbs that she had planted in her garden, and were growing 'beautifully'. 'My dear Mother', Taylor told Mueller, 'is now able to walk into the garden with my help, to see their progress each day, which is a great pleasure to us both' (L80.04.27). Jessie Hussey felt honoured to possess a photograph and a lithographed portrait of Mueller. 'You sent me a splendid photograph of yourself in June 1893', she told him two years later, '(it came on my birthday). I greatly value these, and all other offerings I receive from you' (L95.02.30).

### Personal growth

Given that most of Mueller's female collectors spent only one or two years in his network it is difficult to see this experience as significant in the context of the rest of their lives. Nevertheless, to some of his collectors, at least, obtaining specimens for Mueller clearly was significant, and undoubtedly all the more so, because it engaged them with a vast flora enterprise, and led to a scholarly friendship with a famous botanist, both unexpected and untraditional activities for a female in the 19th century.

In his circular on plant collecting, Mueller also hinted at the possibility of personal growth through botany, to which he could testify personally.

> *Researches af these kinds became furthermare the saurces of educatianal warks, and unfald to well-trained and intelligent minds pure recreative and healthful pleasures, inexpressively everywhere within reach.* (Mueller 1876)

It was a message that came to be appreciated by Jessie Hussey, a troubled young woman living at Port Elliot on the eastern end of the Fleurieu Peninsula in South Australia. When she was 27, Hussey lost her hearing after a short illness, and according to an obituary, this affliction left her feeling hopeless about the future. In 1893, Hussey's father persuaded her to collect algae for Mueller to give her a useful occupation. The partnership lasted for the rest of Mueller's life, and their surviving letters reveal how much a shared interest in botany meant to both of them.

In 1894, Mueller told Hussey that he felt 'much touched' by a recent letter in which she spoke of 'the new sources of pleasure, which had arisen to you, since you obtained some scientific insight into the native flora there'. 'Such assurances', Mueller declared, 'I prize among the best I ever earned' (L94.00.00). In 1896, Mueller wrote,

> *I can assure you that I feel always elevated by the reflectian that I can influence many in the yaunger generatian far higher cantemplatians, and I am cheered when I think that they will bear me same friendly remembrance long after I have passed away.* (Mueller 1896)

He died four months later.

## Conclusion

Over the course of his 43-year career as Government Botanist of Victoria, Ferdinand Mueller recruited at least 225 girls and women into his network of plant collectors. This represented about 12 per cent of his entire network, a figure proportionately much higher than the 4 per cent of women in the network of the Kew Herbarium, the foremost such institution in the British Empire. While there is no evidence that Mueller privileged women in his search for collectors, he did exploit Western society's acceptance of female interest in botany to make his network of collectors as large as possible. In pushing the boundaries of what was deemed possible for girls and

women, he achieved some significant firsts among his female collectors for his collecting network as a whole, including the use of children and named Aboriginal collectors.

Mueller could not, however, and undoubtedly did not seek to, set aside, all gender-discriminatory practices of 19th-century society for the sake of his work. Their influence on female participation in his network can be seen in a number of ways. Women seem to have been mostly recruited to the network through relational ties, and the geographical range of their collecting was limited, which meant that compared to male collectors they contributed relatively few new species. The botanical contributions of girls and women were also influenced by having an 'ornamental' education, which was expressed in botanically-themed creative arts, and a fashionable interest in plant sub-groups such as ferns and algae. Most significantly, however, the time that the overwhelming majority of Mueller's female collectors spent in his network was confined to one or two years, after which they seem to have returned completely to their more traditional work as wives or mothers. While Mueller did not hire women as botanical collectors or artists, he otherwise repaid and acknowledged their contributions to his taxonomic work in the same way as his male collectors.

The compilation of Maroske and Vaughan's (2014) biographical register of Mueller's female collectors made it possible to access this group of 19th-century girls' and women's botanical activities, which hitherto were largely unknown. In addition, small numbers of surviving letters and other fragmentary manuscript and documentary evidence bring some personal details about their motivations and satisfactions into focus. The story of Mueller's female collectors emphasises the collaborative nature of flora writing, something that is downplayed when *Flora australiensis* is attributed to a single author, George Bentham ('with the assistance of Ferdinand Mueller'), despite internal references to collectors. Both male and female collectors are disenfranchised by this process, but in an era when women rarely participated in floras beyond the realm of collecting (even in the final years of the century), any historical approach that focusses on the achievements of 'great scientists' tends to lose sight of the female gender altogether.

A botanical history that recovers the contributions of girls and women in this context will require reframing to incorporate contributions that individually are minor, but collectively important. It will also require expanding the achievements of the 'great men of science' like Mueller, who should be credited with helping to create and to shape an appetite for botany in Australia. Perhaps most importantly of all, it will need to be able to see botany from the point of view of female collectors, and this will require considering aspects of their lived experience previously excluded as irrelevant because they were deemed merely ornamental or domestic.

## Acknowledgements

My thanks go, for many and varied contributions to this article, to Tom May, Alison Vaughan, Sue Janson, Helen Cohn, Jill Thurlow, and to my colleagues on the Mueller Project. I also wish to draw attention to the numerous individuals mentioned in references in Maroske and Vaughan (2014), whose research efforts have helped to fill in the details of Mueller's female collectors.

## References

Allen, D. (1996). 'Tastes and crazes', in N. Jardine, J.A. Secord and E.C. Spary (eds). *Cultures of Natural History*, pp. 394–407. Cambridge University Press: Cambridge.

Anon. (1891). Field Naturalists' Club of Victoria. *Victorian Naturalist* **8(8)**, 115.

Bentham, G. (1863–1878). *Flora australiensis*. Lovell Reeve & Co.: London.

*Brisbane Courier*, 27 October 1900, p. 14.

Calcutta International Exhibition (1883). *Catalogue of exhibits, Victorian Court*. John Ferres, Government Printer: Melbourne.

Caldwell, J.C. (1987). 'Population', in W. Vamplew (ed.) *Australians: Historical statistics*, p. 26. Fairfax, Syme & Weldon Associates: New South Wales.

Chapman, A.D. (1991). *Australian plant name index*. Vols 1–4. Australian Government Printing Service: Canberra.

Charsley, F.A. (1867). *The wild flowers around Melbourne*. Day & Son: London.

Clarke, P. (1990). *Pioneer writer: The life of Louisa Atkinson, novelist, journalist, naturalist*. Allen & Unwin: Sydney.

Clarke, P. (2008). *Aboriginal plant collectors: Botanists and Australian Aboriginal people in the nineteenth century*. Rosenberg Publishing Pty Ltd: Kenthurst.

George, A.S. (2009). 'Plant Collectors to 1900', in *Australian botanist's companion*, pp. 249–610. Four Gables Press: Kardinya, Western Australia.

Gilbert, L. (1992). *The orchid man*. Kangaroo Press: Kenthurst.

*Hobart Mercury*, 17 June 1924, p. 6.

Home, R.W., Lucas, A.M., Maroske, S., Sinkora, D.M. and Voigt, J.H. (eds) (1998). *Regardfully yours: Selected correspondence of Ferdinond von Mueller*. Vol. 1: 1840–1859. Peter Lang: Bern.

Home, R.W., Lucas, A.M., Maraske, S., Sinkora, D.M., Voigt, J.H. and Wells, M. (eds) (2006). *Regardfully yours: Selected correspondence of Ferdinond van Mueller*. Vol. 3: 1876–1896. Peter Lang: Bern.

Jackson, B.D. (1901). A list of the collectors whose plants are in the Herbarium of the Royal Botanic Gardens, Kew, to 31st December, 1899. *Bulletin of miscelloneous informotion.* **169/171**, 1–80.

Jordan, C. 2005. *Picturesque pursuits: Coloniol women ortists & the omoteur trodition*. Melbourne University Press: Carlton, Victoria.

Kalchbrenner, K. (1883). New species of *Agoricus* discavered in West Australia. *Proceedings of the Linnoean Society of New South Wokes* 7, 638–640.

Kass-Simon, G. and Farnes, P. (eds) (1990). *Women of science: Righting the record*. Indiana University Press: Bloomington & Indianapolis.

Kerr, J. (ed.) (1992). *The dictionory of Austrolion ortists, painters, sketchers, photogrophers ond engrovers to 1870*. Oxford University Press: Melbourne.

Lucas, A.H.S. (1937). *A H S. Lucos: Scientist: His own story*. Angus & Robertson: Sydney.

Lucas, A.M. (2003). Assistance at a distance: George Bentham, Ferdinand von Mueller and the production of *Floro Austroliensis*. *Archives of Noturol History* **30(2)**, 255–281.

McCann, Mrs T. (1888). *The paeticol works of Mrs Torrens McConn*. George Robertson & Co.: Melbourne & Sydney.

Maroske, S. (1993). "'The whole great continent as a present": Nineteenth-century Australian women workers in science', in F. Kelly (ed.) *On the edge of discovery: Austrolion women in science*, pp. 13–34. The Text Publishing Company: Melbourne.

Maroske, S. (2005). *Science by correspondence: Ferdinond Mueller ond botony in nineteenth-century Austrolio*. Unpub. Dr. Phil., Dept. History & Philosophy of Science: University of Melbourne.

Maroske, S. (2012). Australian and Indian plants: Making connexions in nineteenth century botany. *Historicol Records of Australian Science* **23(2)**, 107–119.

Maroske, S. and Vaughan, A. (2014). Ferdinand Mueller's female plant collectors: A biographical register. *Muellerio* **32**, 92–172.

May, T.W. (1990). 'History of the study of Australian Agaricales', in P.S. Short (ed.), *History of systemotic botony in Australosio*, pp. 265–272. Australian Systematic Botany Society Inc.: South Yarra.

Mueller, F. (1876). [Circular]. Melbourne.

Mueller, F. (1879). *Introduction to botonic teochings ot the schaals of Victorio, through r to leoding notive plonts*. Government Printer: Melbourne.

Mueller, F. (1879–1884). *Eucalyptogrophio: A descriptive otlos af the eucalypts of Austrolio ond the odjoining islonds*. Decades 1–10. Government Printer: Melbourne.

Mueller, F. (1881). *Frogmento phytagraphioe Austrolioe*. **11**, Supplement: 43–132.

Mueller, F. (1882). *Census of the genero of plonts hitherto known os indigenous to Austrolio*. Government Printer: Sydney.

Mueller, F. (1883). *Systemotic census of Austrolion plonts, with chronologic, literary and geogrophic onnototions*. Pt 1: Vasculares. M'Carron Bird & Co.: Melbourne.

Mueller, F. (1884) *Select extro-tropicol plonts, readily eligible for industriol culture or naturolisotion with indicotions of their notive countries and same of their uses*. George S. Davis: Detroit.

Mueller, F. (1885). *Select extro-tropicol plonts, readily eligible for industriol culture or noturolisotion* [...]. Government Printer: Melbourne.

Mueller, F. (1888) *Select extro-tropicol plonts, readily eligible for industriol culture ar noturolisotion* [...]. Government Printer: Melbaurne.

Mueller, F. (1891) *Select extro-tropicol plonts, readily eligible for industriol culture ar noturolisotion* [...]. Government Printer: Melbourne.

Mueller, F. (1895) *Select extro-tropicol plonts, readily eligible for industriol culture or noturolisation* [...]. Government Printer: Melbourne.

Mueller, F. (1896). *Adeloide Observer*, 24 October, p. 43.

Olsen, P. (2013). *Collecting ladies: Ferdinond van Mueller ond wamen botonicol ortists*. National Library of Australia: Canberra.

Paul, M. (2012). *Funding saught for Aboriginol longuoge closses*. Australian Braadcasting Corporation. Retrieved 1 June 2012. <http://www.abc.net.au/news/2012-05-30/menindee-minister/4042456>.

*Perth Gozette*, 19 February 1869, p. 2.

RBG Melbourne (2013). MELISR database. Royal Botanic Gardens Melbourne: South Yarra.

Rudolph, E.D. (1982). Wamen in nineteenth century American botany: a generally unrecognized constituency. *Americon Journol of Botony* **37**, 1346–1355.

Scheps, B. (2005). *Dos verkoufte Museum: die Südsee-Unternehmungen des Hondelshouses Joh. Ces. Godeffroy & Sahn, Hamburg, und die Sammlungen "Museum Godeffroy"*. Goecke & Evers: Keltern-Weiler.

Shteir, A.B. (1996). *Cultivoting women, cultivoting science: Floro's doughters ond botony in Englond 1760 to 1860*. The Johns Hopkins University Press: Baltimore and London.

Slack, N.G. (1987). 'Nineteenth-century American women botanists: wives, widaws, and work', in P.G. Abir-Am and D. Outram (eds), *Uneosy coreers and intimote lives: Women in science, 1789–1987*. Rutgers University Press: New Brunswick and London.

*Stotes ond territaries of Austrolio* (n.d.). Wikipedia, viewed 2013, <http:// http://en.wikipedia.org/wiki/States_and_territaries_of_Australia>

Sumner, R. (1993). *A womon in the wilderness: The story of Amolie Dietrich in Australio*. NSW Press: Kensington, NSW.

Taylor, A. (1996). Baron von Mueller in the Field Naturalists' tradition. *Victorion Noturolist* **113(4)**, 131–139.

Vellacot, H. (ed.) (1986). *Some recollections of o hoppy life: Morionne North in Austrolio & New Zeolond*. Edward Arnold Australia: Caulfield East, Victoria.

*Victorian Noturolist*, May 1895, p. 13.

Watts, R. (2007). *Women in science: A sociol ond culturol history*. Routledge: London.

*West Australian*, 24 July 1883, p. 2.
*West Australian*, 6 July 1886, p. 3.
*West Australian*, 2 July 1889, p. 3.
*West Australian*, 15 August 1895, p. 5.
*West Australian*, 4 August 1896, p. 5.
*West Australian*, 7 August 1896, p. 12.
Willis, J.H., Pearson, D., Davis, M.T. and Green, J.W. (1986). Australian plants: collectors and illustrators 1780s–1980s. *Western Australian Herbarium Research Notes* **12**.

## Mueller Correspondence (Photocopies and transcriptions in possession of the Mueller Project, Royal Botanic Gardens Melbourne)

LS3.02.03 to William Hooker (Home et al. 1998: 139–142).
L60.04.20 to Joseph Hooker (RBG Kew, Kew correspondence, Australia, Mueller, 1BSB-70, un-numbered folio after f. 44).
L76.04.00 Mueller, F. (1876) [*Circular*], Melbourne.
L76.07.29 to John MacPherson (K76/B043, unit 930, VPRS 3991/P inward registered correspondence, VA 475 Chief Secretary's Department, Public Record Office, Victoria).
L78.05.12 to William Thiselton-Dyer (Home et al. 2006: 119–123).
LB0.02.24 from Diana Bunbury (RB MSS M1, Royal Botanic Gardens Melbourne).
LB0.04.27 from Kate Taylor (Home et al. 2006: 187).
LB1.01.12 to Jean Müller (Home et al. 2006: 199–202).
L81.01.15 to Joseph Hooker (RBG Kew, Kew correspondence, Australia, Mueller, 1B71-B1, f. 2960.
L81.0B.15 from Harriet Scott (RB MSS M1, Royal Botanic Gardens Melbourne).
LB1.11.20 to Mary Bate (RB MSS M25, Royal Botanic Gardens Melbourne).
LB2.03.00 from Annie McCann (Home et al. 2006: 256–257).
L82.09.10 from Annie McCann (RB MSS M1, Royal Botanic Gardens Melbourne).
LB3.0B.11 to Mary Bate (RB MSS M25, Royal Botanic Gardens Melbourne).
LB3.11.05 from Sarah Brooks (Home et al. 2006: 338).
L84.01.04 to Mary Bate (RB MSS M25, Royal Botanic Gardens Melbourne).
L84.07.20 to Mary Bate (RB MSS M25, Royal Botanic Gardens Melbourne).
LB5.12.12 to Mary Kennedy (Home et al. 2006: 421–422).
LB6.00.00 from William Webb (RB MSS M1, Royal Botanic Gardens Melbourne).
LB6.02.15 to Jacob Agardh (Handskr. Avdl., Universitetsbibliotek, Lund, Sweden).
L86.03.09 from Ellie Bauer (RB MSS M64, Royal Botanic Gardens Melbourne).
LB9.07.00 from Charlotte Holding (RB MSS M1, Royal Botanic Gardens Melbourne).
L91.11.20 to Maria Henley (RB MSS M32, Royal Botanic Gardens Melbourne).
L93.10.26 from Harriette Biddulph (RB MSS M1, Royal Botanic Gardens Melbourne).
L94.00.00 to Jessie Hussey (State Library of South Australia, Adelaide, South Australia).
L95.02.30 from Jessie Hussey (RB MSS M53, Royal Botanic Gardens Melbourne).
L95.0B.29 to Clara Ryan (Home et al. 2006: 705–706).
L95.10.01 from May Wise (Home et al. 2006: 709).
L95.10.04 from Jessie Hussey (RB MSS M53, Royal Botanic Gardens Melbourne).
L96.02.02 to Clara Ryan (Letters to Mrs Ryan of Eucla, acc. 2146A, Battye Library, Perth).

# Ferdinand Mueller's female plant collectors: a biographical register

Sara Maroske[1] and Alison Vaughan[2]

[1] Royal Botanic Gardens Melbourne, South Yarra, Victoria 3141, Australia, and Fenner School of Environment & Society, Australian National University, Canberra 0200, Australia; e-mail: saramaroske@optusnet.com.au

[2] Royal Botanic Gardens Melbourne, South Yarra, Victoria 3141, Australia

## Abstract

Using newly available electronic and other resources, and a combination of historical research and collections management expertise, 225 of Ferdinand Mueller's female collectors have been identified, and their contribution to Australian botany outlined. This information is summarised in a biographical register. Appendices containing handwriting, portraits and maps are provided.

***Key words:*** Ferdinand Mueller, plant collectors, women, biography, history of botany

*Muelleria* 32:92–172 (2014)

## Introduction

In 1849, when he was naturalised in Adelaide, Ferdinand Mueller became the first Australian botanist with an ambition to write a flora of Australia. The continent was so vast, however, and so difficult to traverse, that he needed to recruit a network of collectors to help him obtain specimens of all the plants that grew in Australia (Maroske 2005: 57–62). The herbarium that Mueller amassed with the help of his male and female volunteers formed the foundation of what is now the National Herbarium of Victoria (MEL).

Mueller did not achieve his goal to write a flora of Australia, that project being taken over by Kew-based botanist George Bentham in 1858. Nevertheless, between 1861 and 1878, when the final volume of *Flora Australiensis* was published, Mueller shipped thousands of his and his collectors' specimens to Kew for Bentham to consult in preparation of the flora (Maroske 2005: 94). The names of a number of these collectors are acknowledged in Bentham's volumes, and in Mueller's own publications that he issued until his death in 1896, but many, especially the girls and women, remain as un-researched names on specimen sheets at MEL.

Until the last decade, the investigation of most of Mueller's female collectors was held back by the inaccessibility of relevant information. This is the case in regard to both the number of collectors and the level of detail known about them.

In 1986, Willis et al. published the first list of Australian plant collectors and illustrators. It covered the period from the 1780s to the 1980s, and attempted to provide information in three categories: name, dates and profession. Of the entries listed, 108 are females (as deduced from either title or first name) who were potentially active as collectors between 1853 and 1896 (Mueller's term as Government Botanist of Victoria). Only 51 of the female collectors are given dates of birth and death; the rest have dates of collecting activity. Willis et al. intended to produce a more detailed catalogue of biographies, but the difficulties they faced identifying individuals in in an era before the mass digitisation and cataloguing of key genealogical sources proved insurmountable.

In 1992, MEL began to create an electronic database of its collections (MELISR), and to date has processed about 90 per cent of the Australian collections. The fields for each specimen in MELISR include (among others) collector name, collecting locality, and collecting date. Until recently there was no field for recording titles or gender, so female collectors are often only recognisable because the collector's name is prefaced with either 'Miss' or 'Mrs' (though honorifics are generally only recorded when the collector's initials are unknown, or if there is ambiguity surrounding his or her identity). Female first names are also usually distinctive and are sometimes recorded on the labels, though rarely in the database. The name variants listed at the end of each individual's entry in the register below reflect a combination of what is recorded on MEL labels and what has been entered in MELISR by data entry staff.

Using MELISR, and electronic databases from other Australian herbaria, Alex George (2009) created a longer and more detailed list of Australian plant collectors and illustrators. This list recognises 169 female collectors who contributed specimens to MEL between 1853 and 1896,[1] although 13 are only mentioned within the entries of other collectors, usually their husbands or fathers. Of these 169 female collectors, George was able to provide basic biographical details, including at least dates of birth and death, for 50 (30 per cent) of them.

In this study we have used a variety of sources to increase the total of Mueller's female collectors to 225, many of whom were identifiable because of the digitisation of significant archival materials in the last five to ten years. Our total must be regarded as a minimum, because undoubtedly some individuals are yet to be discovered in uncatalogued MEL specimens and other sources. We have provided basic biographical details, including at least dates of birth and death, for 153 (68 per cent) of the 225 female collectors.

Apart from MELISR, the main electronic source we have used is the Mueller Project letters, a collection of about 13,000 letters to and from Mueller that have been transcribed (translated into English when necessary), and edited by an international team of scholars. Three volumes of Mueller's correspondence have been published (Home et al. 1998, 2002, 2006), and the collected correspondence is being prepared for publication online. A significant number of Mueller's publications have also been digitised, some with full-text search capability (e.g. in Google Books <books.google.com.au> and the Biodiversity Heritage Library <www.biodiversitylibrary.org>). Another important electronic source that we have used is 'Australian Newspapers' in Trove, which was launched in 2008 and is still adding titles. As of 11 September 2013, there were over 11 million pages available to search (<nla.gov.au/content/newspaper-digitisation-program>). Indexes to births, deaths and marriages are available digitally for all the Australian states and colonies in the State Library of Victoria, and we found additional useful genealogical information and family trees on the internet (e.g. Ancestry.com <ancestry.com.au>).

In addition to electronic sources, we used the biographical files at the Royal Botanic Gardens Melbourne on collectors, illustrators and botanists (RB MSS 316). This collection is, in part, the legacy of Willis et al. (1986) and is continually added to as new information is discovered. The Genealogy Centre at the State Library of Victoria is the repository (or host) of original (or electronic) directories, indexes, lists and histories that are cited in our references.

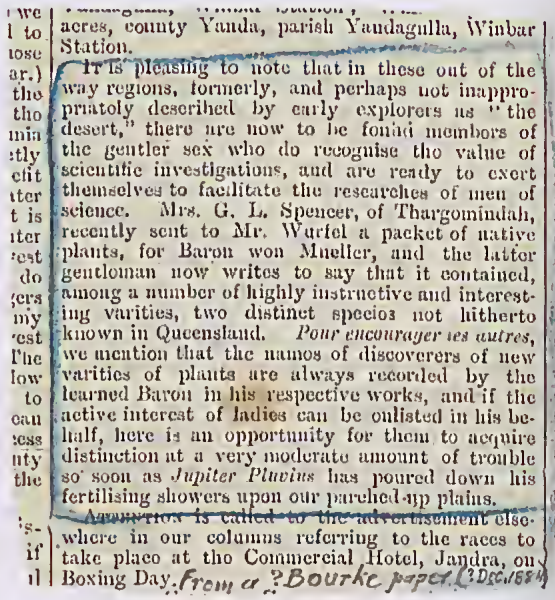
While MELISR has usually been our entry point to Mueller's herbarium, it has not been a substitute for examining specimens first hand. Ambiguities and contradictions in sources have required us to make decisions about their relative authority, and we have placed most credence on documents in the handwriting of collectors themselves. This has required many trips to MEL specimen cupboards and intense study of labels and other documents attached to specimens.

1. We have excluded ten entries listed in George (2009) from our biographical register. A number of these went when we combined entries – Eva F. Lamont + Eva F. Bowkett = Eva Frances Lamont (later Mrs Bowkett); Jemima Frances Irvine née Burn + Miss Jemma Irvine + Mrs Irvine = Jemima Frances Irvine née Burn; Louise Therese Wehl + Mrs Matthieson = Louise Therese Wehl (later Mrs Matthiessen). A number went because we established that the individual's collections were incorporated into MEL after M's death – Miss F. Brumby (i.e. Fanny Brumby, incorporated in 1897), Mrs H.D. Clark/e (specimens ex Museum Applied Sciences), Mrs R. Harper (incorporated 1979). We also excluded 'Freda Bage' after establishing that specimens attributed to her were collected by her father, Edward Bage, and 'Mrs William Clarke' because the identification of this collector was based on a misreading of specimens labelled 'Mr William Clarke'. We also replaced 'Mrs Rachel Elinor Lukin née Clifton' with 'possibly Laura Lukin (Later Mrs Phillips)'.

To qualify for inclusion in this register of Mueller's female collectors, a collector's specimens had to be incorporated into MEL during Mueller's term as Government Botanist of Victoria, 1853–1896. This means that the register includes a few individuals who made collections before Mueller's appointment as Government Botanist, such as Mueller's sister Clara Mueller (later Mrs Wehl), whose earliest collections date from 1848 in South Australia, and Miss Bell, whose collections date from the 1820s and were probably incorporated into the MEL collection as part of the Sonder herbarium. Several female collectors continued to collect for MEL after Mueller's death in 1896, such as Jessie Hussey, who, unlike most of Mueller's female collectors, formed her own relationships with botanists overseas. The overwhelming majority of Mueller's female collectors, however, were recruited and encouraged to continue in their efforts by Mueller himself, and, if they were collecting when he died in 1896, this year also marks the end of their collecting activities.

The entries in the biographical register are arranged alphabetically according to the name that each individual used when she began collecting. Any earlier maiden name or later married name is also given at the beginning of each entry, e.g. 'Atkinson, Louisa (later Mrs Calvert)', and 'Dietrich, Amalia née Nelle'. If the collector was more commonly known by a name other than her first name, the name she was known as is given in italics, e.g. 'Adams, Mary *Annie*'. Where an individual collected under both her maiden name and her married name, her married name is listed separately with a reference to the main entry. The name of the collector is followed by her dates of birth and death, or of her collecting activity, e.g. 'fl. 1896', and the state (or states) in which she collected. The rest of each entry covers the collector's major life events and relationships: birth, parents, siblings, marriage, children, and information about her collecting activity. Collecting localities and dates are given, as are any types collected, eponymy, names of other herbaria known to hold her collections, and other family or friends who were also MEL collectors. If any correspondence with Mueller survives, this is also noted. We have placed the references at the end of each entry, and they include information on any known portraits (included in Appendix 1 where permission to reproduce the portrait was granted) or examples of handwriting (Appendix 2), and the number of specimens attributed to the collector in MELISR. We have provided a map of each individual's collections where MEL specimens exist, and where locality information is sufficiently detailed to allow the specimens to be meaningfully georeferenced (Appendix 3). Where specimens could not be attributed to a particular individual with certainty (e.g. 'Miss Sewell' collections, which could have been collected by either Geraldine or Julia Sewell), the records have not been mapped.

The neatness of the completed entries tends to belie the difficulties we faced in moving from a possible identification of an individual through to a probable and then finally a certain identification. Few, however, were as challenging as Jessie Spencer née Hubbard. In 1885, Mueller published a new species of a low-growing shrub in the *Southern Science Record*, which he named *Sida spenceriana* after its collector 'Mrs F. Spencer'. Mueller said the shrub had been found at 'Yappunyah and Thargomindah close to the Paroo River' in Queensland, an area that is still very remote today. A different name for the collector, 'Mrs G.L. Spencer of Thargomindah' was given in an original clipping from a late 19th-century newspaper in the MEL biographical files (Fig. 1). This article also suggested that Mrs Spencer sent packets of native plants to Mueller via another collector, Adolph Wuerfel.


acres, county Yanda, parish Yandagulla, Winbar Station.

It is pleasing to note that in these out of the way regions, formerly, and perhaps not inappropriately described by early explorers as "the desert," there are now to be found members of the gentler sex who do recognise the value of scientific investigations, and are ready to exert themselves to facilitate the researches of men of science. Mrs. G. L. Spencer, of Thargomindah, recently sent to Mr. Wurfel a packet of native plants, for Baron von Mueller, and the latter gentleman now writes to say that it contained, among a number of highly instructive and interesting varities, two distinct species not hitherto known in Queensland. *Pour encourager les autres*, we mention that the names of discoverers of new varities of plants are always recorded by the learned Baron in his respective works, and if the active interest of ladies can be enlisted in his behalf, here is an opportunity for them to acquire distinction at a very moderate amount of trouble so soon as *Jupiter Pluvius* has poured down his fertilising showers upon our parched-up plains.

Attention is called to the advertisement elsewhere in our columns referring to the races to take place at the Commercial Hotel, Jandra, on Boxing Day. From a ? Bourke paper (3 Dec. 1884)

**Figure 1.** Unidentified newspaper clipping, 'Spencer, Mrs', RBMSS 316, Royal Botanic Gardens Melbourne

To add to the confusion about names, MELISR threw up a batch of specimens collected from the New South Wales/Queensland border to Thargomindah and up to Roma, 1884–1885, attributed variously to Mrs F. Spencer, Mrs C.G. Spencer and Mrs C.G. Spence.

A search on Trove revealed that the Spencer family were pioneering settlers in New South Wales (where William Lamprell Spencer owned 'Ironbark Station' at Barrabra) and in Queensland (where William's brother Stephen Spencer owned 'Mount Abundance Station'). A third brother, Charles, was an Anglican minister in New South Wales and then in Roma, Queensland. In 1842, Charles married Susannah née Dowling, and they had ten children in New South Wales, including Charles George Spencer whose initials would make his wife 'Mrs C.G. Spencer', matching at least some of the records on MELISR.

Using New South Wales and Queensland births, deaths and marriages, we discovered that Charles George Spencer married 17-year-old Jessie Hubbard in Bourke, New South Wales, in 1876. At the time, Charles seems to have been working as a drover in the district. Adolph Wuerfel, the contact between 'Mrs G.L. Spencer' and Mueller, also resided in Bourke, c.1875–1885.

Jessie and Charles had at least seven children in various locations in New South Wales and Queensland, suggesting a peripatetic life. We used information from the birth certificates of three children born in Queensland and from a number of newspaper references to 'Mr C.G. Spencer' to place Jessie Spencer in the vicinity of the MEL 'Mrs Spencer' collections (Table 1). Having also failed to find any 'Mrs F. Spencer' or 'Mrs G.L. Spencer' references in newspapers or births, deaths and marriages, it seemed reasonable to conclude, therefore, that Mrs Spencer of Thargomindah was *probably* Jessie Spencer née Hubbard.

This left the 'Mrs F. Spencer' and the 'Mrs G.L. Spencer' to explain. As the only evidence for 'Mrs G.L. Spencer' was a newspaper clipping, it is possible that the newspaper simply made a mistake – and should have referred to 'Mrs C.G. Spencer' – just as it should have referred to 'Mr Wuerfel' or 'Mr Würfel' instead of 'Mr Wurfel'. To solve the problem of 'Mrs F. Spencer', however, we decided to look at labels on some of the 266-odd Spencer specimens at MEL. The type of *Sida spenceriana* had a label written by Mueller (Fig. 2). Unfortunately, his rendering of the initial before 'Spencer' seemed to be halfway between 'F' and 'J' suggesting that he was not sure about Jessie's name. The initial was certainly not the same as the 'F' in his own name.

After almost giving up hope of finding anything definitive, we came across a handwritten note attached

**Table 1.** Timeline of Spencer family movements, 1883–1888

| Date | Event | Spencer specimens | Comments |
|---|---|---|---|
| 6 April 1883 | Spencer child born at 'Nocatunga Station'. C.G. Spencer's occupation given as station manager [birth certificate]. | | Nocatunga Homestead is 110 km from Thargomindah |
| 26 April 1885 | Spencer child born at 'Ardoch Station'. C.G. Spencer's occupation given as station manager [birth certificate]. | | Ardoch Homestead is on the Bulloo River and is 70 km from Thargomindah |
| Dec. 1884–Sep. 1885 | | Jessie collected specimens at Thargomindah | |
| 1885 | | Jessie collected specimens at Eulo, 'Elmina Springs', Cunnamulla, near Roma, Roma, Albany Downs and South Port | |
| 1886 | C.G. Spencer listed as manager, 'Albany Downs' [newspaper] | | Albany Downs Homestead is on the Maranoa River and is 70 km from Mitchell |
| 31 May 1888 | Spencer child born at 'Armadilla Station'. C.G. Spencer's occupation given as overseer [birth certificate]. | | Armadilla Homestead is about 71 km from Mitchell. Armadilla owned by Stephen Spencer, uncle of C.G. Spencer. |

**Figure 2.** The type of *Sida spenceriana* F.Muell. (MEL 0053777A), collected by Jessie Spencer in 1885

to a specimen that Mueller identified as *Brachychiton delabeckei* (Fig. 3). The note says:

> *Kurragong seeds from Thargomindah*
> *leaves I could not get –*
> *J. Spencer*

At first glance, the 'J' could easily be mistaken for 'F', but on closer examination it is clear that what seems to be a cross-bar is only a flourish. More importantly, the letter descends beneath the line of the other letters, which, in the copper-plate style common in the 19th century, is correct for 'J' but not for 'F'. We already knew that Mueller, as much as any modern reader, could struggle with interpreting the handwriting of his correspondents, and among his mistakes are 'Mrs C.G. Spence' for 'Mrs C.G. Spencer', 'Miss Fanelly' for 'Miss Farrelly', and 'Miss Brooke' for 'Miss Brooks' (see Biographical register below).

On balance, therefore, it seemed reasonable for us to conclude that specimens attributed to 'Mrs F.

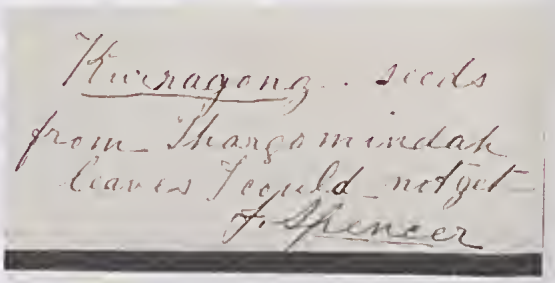



**Figure 3.** Jessie Spencer's note on MEL 0071858A, *Brachychiton rupestris*

Spencer', 'Mrs G.L. Spencer' and 'Mrs C.G. Spencer', *were* all collected by 'Jessie Spencer née Hubbard'. For the first time at the Melbourne herbarium, the identity of the collector of *Sida spenceriana* had been clarified, and Jessie Spencer had been brought out of obscurity into history.

The resolution of ambiguities surrounding the identities of Mueller's female collectors has boosted our understanding of the significance of the contribution of girls and women to the writing of *Flora Australiensis*, and Mueller's and other botanists' works on Australian plants (Maroske 2014). It has also enabled errors in MELISR to be corrected, and highlighted the need for ongoing data curation to continually improve the quality of digitised specimen records. Although the majority of Australian herbarium specimens have been databased, there remain over 25,000[2] undatabased MEL specimens that have been on loan since before databasing began in 1992, and which will undoubtedly include many specimens collected by women listed in the register. There are also thousands of 19th-century Australian specimens in overseas herbaria that probably include specimens by Mueller's female collectors. This register will be expanded by examination of these additional collections, and will also be of great benefit to the curators of these collections and to many other future researchers into the history of Australian botany.

## Acknowledgements

Thanks for many and various kinds of assistance to Monika Wells, Jill Thurlow, Tom May and Sally Stewart (Royal Botanic Gardens Melbourne), Robyn Barker (State Herbarium of South Australia) and Alex S. George (Kardinya, WA). Thanks to Penny Olsen for some additional names of women collectors. Thanks also to Niels Klazenga (Royal Botanic Gardens Melbourne) for help creating the maps, and to Nigel Sinnott for providing electronic transcriptions of Australian fungi protologues.

## Bibliography

Australian Dictionary of Biography (2014). *Australian dictionary of biography*. <http://adb.anu.edu.au/>.

Biodiversity Heritage Library (2014). *Biodiversity heritage library*. <http://www.biodiversitylibrary.org>.

Cooke, M.C. (1882). Australian fungi. *Grevillea* **10**, 131–136.

Cooke, M.C. (1887). Some Australian Fungi. *Grevillea* **15(76)**, 97–101.

Cooke, M.C. (1888). Australian Fungi. *Grevillea* **16(79)**, 72–76.

Design and Art Australia Online (2014). *Design & Art Australia Online*. <www.daao.org.au>.

Erickson, R. (1979). *Dictionary of Western Australians 1829–1914*, vol. 3. University of Western Australia Press: Nedlands.

George, A.S. (2009). 'Plant Collectors to 1900', in A.S. George (ed.) *Australian botanist's companion*, pp. 249–610. Four Gables Press: Kardinya, Western Australia.

Gibbney, H.J. and Smith, A.G. (1987). *A biographical register 1788–1939: notes from the name index of the Australian dictionary of biography*. 2 vols. Australian Dictionary of Biography: Australian National University, Canberra.

Google Books (2014). <books.google.com.au>

Home, R.W., Lucas, A.M., Maroske, S., Sinkora, D.M. and Voigt, J.H. (eds) (1998). *Regardfully yours: selected correspondence of Ferdinond von Mueller*, vol. 1: 1840–1859. Peter Lang: Bern.

Home, R.W., Lucas, A.M., Maroske, S., Sinkora, D.M. and Voigt, J.H. (eds) (2002). *Regardfully yours: selected correspondence of Ferdinand von Mueller*, vol. 2: 1860–1875. Peter Lang: Bern.

Home, R.W., Lucas, A.M., Maroske, S., Sinkora, D.M., Voigt, J.H. and Wells, M. (eds) (2006). *Regordfully yours: selected correspondence of Ferdinand von Mueller*, vol. 3: 1876–1896. Peter Lang: Bern.

Hull, R. (1996). *James Hodgkinson and his life at Woodstock Stotion*. Maiden Gully: Victoria.

Jackson, 8.D. (1901) A list of the collectors whose plants are in the Herbarium of the Royal Botnaic Gardens, Kew, to 31st December, 1899. *Bulletin of Miscelloneous Informotion* **169/171**, 1–80.

Maroske, S. (2005). 'Science by Correspondence: Ferdinand Mueller and Botany in Nineteenth-Century Australia'. Unpub. Dr. Phil., Dept. History & Philosophy of Science: University of Melbourne.

Maroske, S. (2014). 'A taste for botanic science': Ferdinand Mueller's female collectors and the history of Australian botany. *Muellerio* **32**, 72–91.

National Library of Australia (2014). *Australian Newspapers*. <http://www.nla.gov.au/content/newspaper-digitisation-program>.

New South Wales Attorney General and Justice (2014.) *Registry of births, deaths and marriages*. NSW Government. <http://www.bdm.nsw.gov.au>.

Queensland Department of Justice and Attorney-General (2014). *Births, deoths ond marrioges*. Queensland Government. <http://www.bdm.qld.gov.au>.

R8G Melbourne (2014). MELISR database, Royal 8otanic Gardens Melbourne. Updated daily.

Western Australian Department of the Attorney General (2014). *Registry of births, deoths ond marrioges*. Government of Western Australia. <http://www.bdm.dotag.wa.gov.au/>.

Willis, J.H., Pearson, D., Davis, M.T. and Green, J.W. (1986). Australian plants: collectors and illustrators 1780s–1980s, edn 2. *Western Australian Herbarium Research Notes* **12**, 1–111.

Willis, M. (1949). *By their fruits: A life of Ferdinand von Mueller*. Angus & Robertson: Sydney.

2. As of October 2013. This figure includes approximately 5,500 specimens that have been returned to MEL, but are awaiting databasing.

## Biographical register

### Abbreviations

ABC = George, A.S. (2009). 'Plant Collectors to 1900', in A.S. George (ed.) *Australian botanist's companion*, pp. 249–610. Four Gables Press: Kardinya, Western Australia.

ADB = Australian Dictionary of Biography (2014). *Australian dictionary of biography*. <http://adb.anu.edu.au/>.

coll. = collected

DAAO = Design and Art Australia Online (2014). *Design & Art Australia Online*. <www.daao.org.au>.

DWA = Erickson, R. (1979). *Dictionary of Western Australians 1829–1914*, vol. 3. University of Western Australia Press: Nedlands, Western Australia.

fl. = *floruit* (flourished, i.e. active)

FNCV = Field Naturalists' Club of Victoria

M = Ferdinand Mueller, Melbourne

MEL = National Herbarium of Victoria, Royal Botanic Gardens Melbourne

MELISR = MEL Information Systems Register (the collections database of the National Herbarium of Victoria)

n.d. = no date

NSW-BDM = New South Wales Attorney General and Justice (2014). *Registry of births, deaths and marriages*. NSW Government. <http://www.bdm.nsw.gov.au>.

Qld-BDM = Queensland Department of Justice and Attorney-General (2014). *Births, deaths and marriages*. Queensland Government. <http://www.bdm.qld.gov.au>.

RBG Melbourne = Royal Botanic Gardens Melbourne

WA-BDM = WA Department of the Attorney General (2013). *Registry of births, deaths and marriages*. Government of Western Australia. <http://www.bdm.dotag.wa.gov.au/>.

### Conventions

Australian states and territories are abbreviated.

B numbers are references to ***Mueller publications*** that are given in full in Home et al. (1998), pp. 556–685.

***Mueller Project letters*** are references to Mueller letters that are in the database of 'The Correspondence of Ferdinand von Mueller Project', Royal Botanic Gardens Melbourne. See Home et al. (1998), p 56.

Herbarium abbreviations are taken from 'Index herbariorum: A global directory of public herbaria and associated staff', <http://sciweb.nybg.org/science2/IndexHerbariorum.asp>.

Plant, fungi and algae names commemorating collectors are provided, but later combinations are not included. The date the name was published is given in parentheses.

Unless otherwise stated, collections are usually vascular plants.

Within entries, localities are listed in chronological then aphabetical order, but collections from the same locality are grouped with the first mention. Undated localities are listed last.

References that are given in full within the ***References*** section of an individual entry are not listed in the Bibliography, but may be cited in other sections of the entry, such as ***Portrait***.

### Appendices

Appendix 1 presents the portraits of Mueller's female collectors that were of sufficient quality and that we were permitted to reproduce. Where no attribution is listed, the portrait is from the RBG Melbourne archives.

Appendix 2 presents handwriting samples of Mueller's female collectors. Where no attribution is listed, the handwriting sample is from either the MEL herbarium collection or the RBG Melbourne archives.

Appendix 3 presents maps of collecting localities for Mueller's female collectors who have specimens at MEL, and where the locality information is sufficiently detailed for the specimen(s) to be georeferenced. The locality data is taken from the MEL collections database, MELISR (RBG Melbourne 2014).

**ADAMS, (Miss),** fl. 1889, coll. Vic./NSW/SA. Collected a MEL specimen at the Murray River, 1889.

***MELISR:*** 1 specimen. Miss Adams. ***References:*** MEL label (R8 MSS 229a), R8G Melbourne.

**ADAMS, Mary *Annie*** (later Mrs Wilkins), 14 March 1874 – 10 May 1931, coll. WA. Born in WA, the third of eleven children, to settlers Charles Frederick Adams (1846–1895) and Jane Swaine née Glass (1849–1934). The family took up the sheep station 'Mangowine' near Yarragin in 1871. Annie collected MEL specimens around 'Mangowine', 1889–1891. She collected the type of *Boronia adamsiana* F.Muell. (1890), named for her. Annie also collected plants for Ernest Horace Ising of Adelaide, and plants and birds' eggs for collectors in England. She displayed plant specimens at country shows. In 1901, Annie married the settler William Wilkins (1864–1901), who died in the same year. In 1903, she married William's brother Henry Wilkins (1874–1936). They lived on a farm at Wongan Hills and had five children. Annie died at Wongan Hills in 1931 aged 57.

***MELISR:*** 119 specimens. Miss A. Adams/ A. Adams/ Miss Adams. ***References:*** ABC ('Adams, Annie Mary'); DWA; Adams of Western Australia (<www.adamswa.com>, viewed 2011); WA-BDM (viewed 2011); *West Australian* (22 June 1936: 11, death H. Wilkins). ***Mueller publications:*** B90.06.02 (eponymy). ***Mop:*** Appendix 3.

**ALDERSEY, Mary Ann** (Miss), 17 November 1825 – 4 May 1906, coll. SA. Born in England, one of at least six children, to Richard Baker Aldersey (c.1794–1857), and his wife Elizabeth Emma (c.1813–1891). The Alderseys migrated to SA in 1849 and settled at Willunga, then afterwards at McLaren Vale. As an adult, Mary co-founded and taught at a girls' school, 'Tsong Gyiaou', at McLaren Vale. She collected MEL specimens at McLaren Vale, 1883 (sent to M via Otto Tepper). She did not marry, and died in 1906 at McLaren Vale aged 80.

***MELISR:*** 3 specimens. M.A. Aldersey. ***References:*** ABC ('Aldersey, Mary Ann'); Indexes to South Australian BDM records, State Library of Victoria; *Advertiser* (12 May 1891: 4, mother's death); *Advertiser* (5 May 1906: 8, obituary). ***Mueller Project letters:*** LB3.11.19 to R. Tate. ***Portrait:*** Manning, G.H. (1984). *Hope Farm chronicle: Pioneering tales of South Australia.* Adelaide: 70; Willunga Branch, National Trust of South Australia (Appendix 1). ***Handwriting:*** Willunga Branch, National Trust of South Australia (Appendix 2). ***Mop:*** Appendix 3.

**ALLEN, (Miss),** fl. 1880, coll. SA. Collected a MEL specimen at Yallum, 1880. Miss Allen also collected plant specimens for Ralph Tate.

***MELISR:*** 1 specimen. Miss Allen. ***References:*** ABC ('Allen, Miss' possibly Catherine Allen b.1863, daughter of Charles R. Allen of Penola, SA); *Trans. Proc. & Rep. Roy. Soc. S.A.* (1883: 95–99, Tate collections). ***Map:*** Appendix 3.

**ALLEN, Grace Adelaide** (later Mrs Roberts), c.1871 – 14 October 1940, coll. Qld. Born in Mackay, Qld, to an accountant, John Allen, and Jemima née Cook. Grace sent M a specimen of a garden plant from Cairns in 1894. Her friend, Ellie Bauer, also collected MEL specimens. In 1908, Grace married Harold Griffyard Roberts (d.1929) of 'Shirley Station', and they had two children. In 1940, Grace died aged 69 in Wagga Wagga, NSW, while on a visit to her daughter's family. One letter from Grace to M survives.

***MELISR:*** no specimens. ***References:*** Qld-BDM (viewed 2011); NSW-BDM (viewed 2011); *Queenslonder* (2 December 1893: 1100, Allen & Claydon née Bauer); *Queenslander* (8 February 1908: 13, marriage); *Brisbone Courier* (19 August 1929: 12, husband's death); *Courier Moil* (30 November 1940: 13, will); NSW Death Certificate (1940/026181 Grace Adelaide Roberts). ***Mueller Project letters:*** L94.10.11 from Allen. ***Hondwriting:*** RB MSS M1, R8G Melbourne (Appendix 2).

**ARMYTAGE, (Miss),** fl. c.1895–1896, coll. Vic. Probably Ada Elizabeth Armytage (1858–1939). Born in Balmoral, Vic., one of ten children, to a pastoralist Charles Henry Armytage (1824–1876), and Caroline Morrell née Tuckwell. Ada probably collected MEL specimens (as 'Miss Armytage') at Pakenham, n.d. One of her relatives ('H.N. Armytage') also collected MEL specimens in Qld. Ada did not marry and died in Melbourne in 1939 in her 81st year. Two letters from M to Ada survive, and two from M to her mother.

***MELISR:*** 2 specimens. Miss Armytage. [NB the handwriting on the labels is that of Herbert Bennett Willlamson (1860–1931) who also collected MEL specimens.] ***References:*** ABC ('Armytage, H.N.'); ADB ('Charles Henry Armytage', viewed 2011); *Argus* (7 September 1939: 11, obituary). ***Mueller Project letters:*** L95.04.20, L95.10.14 to Caroline Armytage; L96.04.27, L95.06.11 to Ada Armytage. ***Portrait:*** Armytage Family Collection, University of Melbourne Archives. ***Map:*** Appendix 3.

**ATKINSON, Caroline *Louisa* Waring** (later Mrs Calvert), 25 February 1834 – 27 April 1872, coll. NSW. Born at Oldbury near Berrima, NSW, one of three children, to settlers James Atkinson (1795–1834) and Charlotte née Waring (1796–1867). After the death of Louisa's father, her mother married George Barton and the family lived at Fernhurst near Kurrajong Heights. Louisa was educated at home by her mother who was a teacher and author. Louisa published articles about nature in Sydney newspapers, was an artist, and also wrote novels. In the late 1860s, Louisa and her mother moved back to Oldbury. In 1869, Louisa

married James Snowden Calvert (1825–1884), manager of 'Cavan Station' near Yass. William Woolls introduced Louisa to M. She collected MEL specimens at Berrima, the Blue Mountains, and Kurrajong Heights, 1860–1872. She collected types of *Xonthosia otkinsoniona* F.Muell. (1861), *Acocio trinervoto* var. *ongustifolio* Benth. (1864), *Atkinsonio* F.Muell. (1865), *Alsophilo leichhardtiano* F.Muell. (1865), *Doodio coudoto* var. *lominoso* F.Muell. (1865), *Erechtites otkinsoniae* F.Muell. (1865), *Senecio brochyglossus* var. *elotior* Benth. (1867), *Litsea deolbota* var. *rufo* Benth. (1870), *Bryum erythrocoule* Hampe (1872), *Helipterum colvertianum* F.Muell. (1876), *Pomoderris colvertiono* F.Muell. (1875), and *Coustis restiocea* Benth. (1878). Several of these taxa were named for her. Louisa's husband also collected MEL specimens. There are also Louisa Atkinson specimens at JE, K and NSW. In 1872, Louisa died aged 43 soon after giving birth to a daughter. One letter from Louisa to M survives, and one from M to Louisa. M gave her copies of 862.03.03, and G. Bentham (1863) *Floro Australiensis*.

***MELISR:*** B31 specimens. L. Atkinson/ Miss Atkinson/ M. Atkinson/ Atkinson/ L. Calvert. ***References:*** ABC ('Atkinson, Caroline Louisa Waring'); ADB ('Atkinson, Caroline Louisa Waring', 'Calvert, James Snowden', viewed 2011); Clarke, P. (1990). *Pioneer writer: The life of Louiso Atkinson, novelist, journalist, naturolist*. Sydney. ***Mueller publicatians:*** B61.02.02, B62.03.01, B63.05.01, B65.10.01, B69.07.03 (eponomy). ***Mueller Project letters:*** L71.00.00 from Calvert; L71.01.31 to Calvert. ***Partrait:*** Wikimedia Commons (Appendix 1). ***Handwriting:*** RB MSS M1, RBG Melbourne (Appendix 2). ***Map:*** Appendix 3.

**BARKER, (Mrs)**, fl. 1895, coll. Vic. Possibly Susannah Barker née Hodgkinson (1819 – 24 November 1899). Born, in England, to Richard and Mrs Hodgkinson. In 1844, she married a pastoralist and public servant, John Barker (1815–1891), and went to Vic. They had three sons. The family owned 'Barrabang', 'Cape Schanck' and 'Boneo' runs. Susannah possibly collected a MEL specimen (as 'Mrs Barker') at Cape Schanck, 1895. Susannah's mother-in-law, Mary Anne Barker, also collected MEL specimens. Susannah died of pneumonia in 1899 at Cape Schanck in her 80th year.

***MELISR:*** 1 specimen. Mrs Barker. [NB the handwriting on the associated 'Melbourne Phytologic Museum' label is that of M.] ***References:*** ADB ('John Barker', viewed 2013); *Argus* (25 November 1899: 9, death). ***Map:*** Appendix 3.

**BARKER, (Mrs C.A.)**, fl. 1880, coll. NSW. Collected the type of *Boronio borkeriono* F.Muell. (1880) near Mount Wilson, Blue Mountains (as 'Domina C.A. Barker'). The species was named for her.

***MELISR:*** 1 specimen. C.A. Barker. ***Mueller publicatians:*** BB0.0B.03 (eponymy). ***Map:*** Appendix 3.

**BARKER, Mary Anne** née Eldridge, 1790–1872, coll. Vic. Born in England. Married John Barker (1799–1833), a gentleman, and they had three sons. In 1842, Mary migrated to Vic. where her sons were already pastoralists near Melbourne. She collected MEL specimens at Port Phillip Heads, n.d., and also collected algal specimens for William Harvey at Cape Schanck in the 1850s. M forwarded the specimens to Harvey. Mary collected the type of *Rhodophyllis borkerioe* Harv. (1863), which was named for her. Mary's daughter-in-law, Susannah Barker may also have collected MEL specimens. There are also Mary Barker specimens at NSW. In 1872, Mary died in Melbourne aged 83.

***MELISR:*** 2 specimens. Mrs Barker/ Barker. ***References:*** ABC ('Barker, Mary Ann'); ADB ('John, Edward & William Barker', viewed 2013); *Argus* (14 September 1872: 2, death); Harvey, W.H. (1863). *Phycologia australico*. Lovel Reeve & Co.: London, pl. 276 (eponymy). ***Map:*** Appendix 3.

**BARRETT-LENNARD, Amy Eliza** (later Mrs Forrest) 1852 – 20 August 1897, coll. WA. Born in Beverley, WA, one of two children, to settlers Edmund Thomas Henry Barrett-Lennard (1823–1895) and Elizabeth Ann née Smith. Amy was educated in England. She collected MEL specimens at Beverley, 1878. The specimens were sent to M via Amy's future sister-in-law, Margaret Forrest (who also collected MEL specimens). In 1880, Amy married the explorer and politician Alexander Forrest (1849–1901), and they had five children. Alexander Forrest also collected MEL specimens. Amy died in London in 1897, aged 45, after going there to seek medical advice.

***MELISR:*** B specimens. Miss Lennard. ***References:*** ABC ('Lennard, Miss'); ADB ('Forrest, Alexander', 'Forrest, Alexander', viewed 2013, NB gives Amy's d.o.b. as 1852); WA-BDM (viewed 2013, NB gives Amy's birth registration as 1854); *West Australian* (1 September 1897: 4, obituary – NB gives Amy's d.o.b. as November 1857). ***Portroit:*** State Library of Western Australia (Amy Forrest, 1890, <http://purl.slwa.wa.gov.au/slwa_b2361244_007>, viewed 2013) (Appendix 1). ***Mop:*** Appendix 3.

**BARRY, Elizabeth** (later Mrs Jackson), 1862 – 15 September 1932, coll. NSW. Born at Cooma, NSW, one of seven children to John Barry (c.1826–1897) and Lucy née Pendergast (1831–1918) of 'Moonbah Station'. Elizabeth collected MEL specimens at Moonbah via Cooma, 1884. In 1892, Elizabeth married Henry Jackson of Ryde and they had six children. Elizabeth died in 1932 at North Ryde in her 70th year.

***MELISR:*** 4 specimens. Elizabeth Barry. ***References:*** ABC ('Barry, E.'); NSW-BDM (viewed 2013); *Manoro Mercury & Cooma & Bombala Advertiser* (25 October 1918: 2, 'Death Mrs. Barry Senr Moonbah', mother's obituary); *Freeman's Journal* (22 September 1932: 25, 'Mrs. Elizabeth Jackson', obituary). ***Mop:*** Appendix 3.

**BASSETT, (Miss),** fl. 1894, coll. NSW. Collected a MEL specimen on the upper Lachlan River, 1894.

***MELISR:*** 1 specimen. Miss Bassett. ***References:*** ABC ('Bassett, E.B. [Miss]'). ***Mop:*** Appendix 3.

**BATE, Mary Harriet** (later Mrs Griffiths), 1 October 1855 – 29 December 1951, coll. NSW. Born in Sydney, one of nine children, to Henry Jefferson Bate (1816–1892), and Elizabeth Kendall née Mossop (c.1816–1910). In 1869, the family selected the property 'Mountain View' near Tilba Tilba. Mary collected MEL specimens (including fungi, algae and mosses) at Bermagui River, Mount Dromedary, and Tilba Tilba, 1881–1886. She collected types of *Myoporum boteoe* F.Muell. (1882), *Bryum boteoe* Müll.Hal. (1898), named for her, *Trometes heteromollo* Cooke (1882), *Sorgossum loevigotum* J.Agardh (1889), *Bryum viridulum* Müll.Hal. (1898) and *Eucolyptus bosistoona* F.Muell. (1895). Jacob Agardh identified Mary's algal specimens for her, Mordecai Cooke identified fungal specimens, and Carl Müller Identified her mosses. There are also Mary Bate specimens at G and NSW. In 1886, Mary married John Vincent Griffiths (d.1940), a storekeeper at Bombala, and they had five children. Mary died at Kyogle in 1951 at the age of 96. Five letters survive from M to Mary, and three letters from Mary to M.

***MELISR:*** 361 specimens. Miss Mary Bate/ Miss M. Bate/ M.H. Bate/ M. Bate/ H. Bate/ Miss Bate/ Bate. ***References:*** ABC ('Bate, Mary Harriet'); NSW-BDM (viewed 2011); Cooke (1BB2: 132); *Sydney Morning Herald* (19 June 1931: 7, 'Mountain View'). ***Mueller publicotions:*** BB2.13.03 (eponymy). ***Mueller Project letters:*** LB1.11.20 to Bate; LB2.09.11 from Agardh; LB3.03.29 to Bate; LB3.0B.11, LB4.00.00 from Bate; LB4.01.04 to Bate; LB4.04.16 from Bate; L84.07.20 to Bate; LB6.03.00 from Bate. ***Portroit:*** RB MSS M25, RBG Melbourne (Appendix 1). ***Hondwriting:*** RB MSS M25, RBG Melbourne (Appendix 2). ***Mop:*** Appendix 3.

**BAUDINET, Louisa (Lucy) Isabella Chaulk** (Miss), 7 April 1825 – 13 February 1901, coll. Tas. Born in London, the second of twelve children, to William Chaulk (later Baudinet) (c.1799–1865), and Augusta Louisa née Baudinet (1805–1873). The family migrated to WA in 1829, and then to Tas. in 1831. Lucy's father was the first lighthouse keeper on Bruny Island, 1838–1847, and then on Deal Island, 1848–1865. After her parents died, Lucy lived with siblings, often with brother Charles Chaulk Baudinet (1832–1916) who was the lighthouse keeper on Swan Island, 1867–1891. Lucy collected MEL specimens (as 'Miss Baudinet') on Swan Island, 1869, and at Cape Portland and Clarke Island, 1883–1885. Jacob Agardh identified Lucy's algal specimens for M. There are also 'Miss Baudinet' specimens at NSW. She never married and died aged 75 in Hobart at the Newtown Charitable Institution of *senilis*.

***MELISR:*** 97 specimens. Miss Baudinet. ***References:*** ABC ('Baudinet, Miss'); Baudinette, M. (1990). *The Baudinet story: the story of the descendants of the Boudinet and Baudinette families 1777–1930s*. Warrnambool. ***Mueller Project letters:*** LB5.00.00 from J. Agardh (mentions Miss Baudinet, Cape Portland). ***Mueller publicotions:*** B69.07.03 (Swan Island specimens). ***Portroit:*** Baudinette (1990). ***Mop:*** Appendix 3.

**BAUER, Sophie Wilhelmine *Eleanore* (Ellie)** (later Mrs Claydon), 3 August 1863 – 5 December 1943, coll. Qld. Born in Qld, one of nine children, to a businessman Frederick Georg Bauer (1824–1890) and Ann Rebecca née Pearson (1830–1924). Frederick Bauer was an ironmonger and shipping agent in Geelong, Vic., before moving his family to the Pimpama River, Qld, in 1862, to establish the Victorian Cotton Company. The family switched to sugar production in 1864, and established the Vilele Sugar Plantation on the Bloomfield River in 1882. This enterprise, too, was unsuccessful and eventually wound up in 1894. Ellie collected (numbered) MEL specimens (including algae) at the mouth of the Bloomfield River, 1884–1886; Mackay, 1884; and Cooktown, 1887. She collected the type of *Harpullio divaricota* Radlk. (1891). Jacob Agardh identified Ellie's algal specimens for M. There are also Ellie Bauer specimens at FI and G, presumably forwarded to Europe by M. He also gave her a copy of his *Select extro-tropicol plants* (1885). In 1888, Ellie married Ernest Henry Beales Claydon (c.1863–1930), head survey draftsman for the Kuranda Railway. Ellie collected one MEL specimen (as 'Mrs E. Claydon') at Port Douglas, 1890. Her friend Grace Adelaide Allen also collected a MEL specimen. Ellie and her husband had one child in Qld and then moved to NSW where they had another ten. Ellie's husband became Canon at St Andrew's Cathedral, Sydney, in 1918. In 1943, Ellie died at Wahroonga in her 80th year. Four letters from Ellie to M survive.

***MELISR:*** 110 specimens. Miss E. Bauer/ E. Bauer/ Miss Bauer/ Mrs E. Claydon. ***References:*** ABC ('Bauer, Ellie, Miss'); Bauer, A.R. & Croker, P. (2010). *Bauer's road to Bloomfield: the trials and triumphs of a 19th century entrepreneur*. Mackay, Qld; Talbot, P.S. (1995). *The Charles Claydon family history*. St Ives, NSW; *Sydney Morning Herald* (6 December 1943: B, death). ***Mueller Project letters:*** LB4.04.25,

L84.06.25 from Bauer; L85.00.00 from Agardh; L86.03.09 from Bauer; L86.03.04 to Deakin (re book); L86.03.24 from Bauer. ***Portrait:*** Talbot (1995) (Appendix 1). ***Handwriting:*** RB MS5 M64, RBG Melbourne (Appendix 2). ***Map:*** Appendix 3.

**BEAL, (Miss)**, fl. 1873–1875, coll. Vic. Probably Ada Murch Beal (1864 – 16 December 1948). Born in Vic., one of seven children, to settlers Charles Beal (1821–1888) and Amy née Murch (c.1827–1925). The family lived at the residences 'Bleak House' in Birregurra, and 'Varna' in Lorne. Ada probably collected MEL specimens (as 'Miss Beal') at Mount Gellibrand, 1873; Loutit Bay, 1875; and Richardson River, 1875. Her mother, Amy Beal, also collected MEL specimens. In 1879, M gave Ada an inscribed copy of F.A. Charsley (1867) *Wildflowers around Melbourne*. As an adult, Ada lived at the residence 'Llandoo' in Lorne. She never married and died in 1948 at the Birregurra Hospital in her 84th year.

***MELISR:*** 8 specimens. Miss Beal. [N8 Charles and Amy Beal had four other daughters who were unmarried 1873–1875 and may have collected MEL specimens as 'Miss Beal': Alice Edith Beal (b.1856), Annie Eliza Beal (1857–1943), Eleanor Amy Beal (b.1859) and Blanche Beatrice Beal (b.1868).] ***References:*** ABC ('Beal, A., Mrs'); Vic. Indexes to Victorian BDM records, State Library of Victoria; *Argus* (17 December 1948: 14, death). ***Mueller Project letters:*** L79.12.31 to Beal (book inscription). ***Map:*** Appendix 3.

**BEAL, Amy** née Murch, c.1827–1925, coll. Vic. Born, one of at least three children, to George Murch and Eliza née Spiers. In 1855, Amy married a settler, Charles Beal (1821–1888), and they had seven children. The family ran 'Mount Gellibrand' sheep station, Winchelsea, 1853–1860, and then lived at the residences 'Bleak House' in Birregurra, followed by 'Varna' in Lorne. Amy cultivated native ferns, and collected MEL specimens, at Loutit Bay, 1879–1884, and Lorne, 1883. A daughter (see Miss Beal) also collected MEL specimens. Jacob Agardh identified Amy's algal specimens for M. *Conostylis beoliono* F.Muell. (1875) was named for her. Amy died in Lorne in 1925 aged 98. One letter from Amy to M survives, and two letters from M to Amy.

***MELISR:*** 12 specimens. Mrs Beal/ Mrs A. Beal. ***References:*** ABC ('Beal, A., Mrs'); Gibbney & Smith (1987, 'Beal, Charles'); Indexes to Victorian BDM records, State Library of Victoria. ***Mueller publicatians:*** B75.05.05 (eponymy, native fern interest). ***Mueller Project letters:*** L85.04.30 from J. Agardh; LBB.02.13 from Beal; L88.08.14, L88.11.21 to Beal. ***Handwriting:*** A39, Mitchell Library, State Library of NSW. ***Map:*** Appendix 3.

**BELL, (Miss)**, fl. 1831, coll. NSW. Probably one of eight daughters born to Lieut. Archibald Bell (1772–1837) and Maria née Kitching (1777–1841). The Bells had a property 'Belmont' in the Blue Mountains, where Allan Cunningham stayed in November 1823. Some 'Miss Bell' specimens are mounted on the same sheet as 'Allan Cunningham, Anderson and others' specimens from H.C. Watson's herbarium, and another is annotated 'qui. H.W.' presumably indicating it is also from Watson's herbarium. The specimens collected by Miss Bell (one dated 1831) are all ornamental, and include specimens from places visited by Cunningham on other journeys (at least one is from Africa), so it is likely that Cunningham provided Miss Bell with plants or seeds to grow. Miss Bell's specimens were not sent directly to Mueller, but were presumably incorporated into the MEL collection with the Sonder herbarium. There are A. Bell specimens labelled with the same handwriting, suggesting that Miss Bell's brother (Archibald Jr), or possibly her father, also collected specimens.

***MELISR:*** 20 specimens. Miss Bell. [NB Miss Bell was previously thought to be the same person as Miss Annie Bell, who collected in NSW in the late 1880s, but the one specimen dated 1831 and the connection with Cunningham preclude this.] ***References:*** ABC ('Bell, Miss'). ADB ('Archibald Bell' & 'Thomas Simpson Hall'), viewed August 2013; 'Descendancy chart: Archibald (Lieutenant) (Ensign) Bell' (<www.thebells.id.au>, viewed 2013); The Allan Cunningham Project (<www.artuccino.com/Allan_Cunningham/Robert_Heward>, viewed 2013).

**BELL, Annie** (Miss), fl. 1887–1890, coll. NSW. Collected MEL specimens at Booligal and the Lachlan River, 1887–1890.

***MELISR:*** 75 specimens. Miss Annie Bell/ Miss A. Bell. ***References:*** ABC ('Bell, Annie'); MEL label 'Miss A. Bell' (RB MSS 229a), RBG Melbourne. ***Map:*** Appendix 3.

**BENNETT, Muriel Mary** (later Mrs Worster), 1880–1958, coll. Vic. Born in South Yarra, one of four children, to Arthur William Henry Bennett (1844–1930) and May Elizabeth née Lang. The family established a watchmaking business in Sale. Muriel attended Sale Ladies' High School. She collected a MEL specimen (with May Wise) at Sale, 1895. Muriel's friends May and Lilian Wise also collected MEL specimens. A paper called 'List of orchids collected near Sale' by May and Lilian Wise and Muriel Bennett was communicated to a meeting of the FNCV on 13 May 1895. Muriel trained as a nurse and served in India during the First World War. In 1919, in Melbourne, she married a salesman, actor, and divorcé, Alexander Howett Worster (1887–1952). They divorced in 1925 due to Alexander's misconduct. Muriel died in Malvern in 1958 in her 78th year.

***MELISR:*** 1 specimen. Miss M. Wise & Miss Bennett. ***References:*** *Victorian Naturalist* (May 1895: 13); *Gippsland Times* (3 May 1919: 3, war service); *Gippsland Times* (12 June 1919: 3, war service);

*Gippsland Times* (5 January 1931: 5, father's death); *Argus* (28 November 1925: 27, divorce); 'Alexander Howett Warster' (<http://rateyourmusic.com/artist/hawett_warster>, viewed 2014). ***Mueller Project letters:*** L95.10.01 from M. Wise. ***Portrait:*** *Borrier Miner* (28 November 1925: 1). ***Map:*** Appendix 3.

**BERTHON, Elizabeth de Crillon (Lily)** (Miss), 27 October 1852 – 28 September 1946, coll. Vic. Born in Inverleigh, Vic., one of eight children, to settlers William Berthon (c.1819–1901) and Elizabeth née Kelly (d.1903). The family moved to 'Wybellenna' on Painkalac Creek, Aireys Inlet, in 1880. Lily was a landscape painter in oils. She collected MEL specimens (fungi and lichens) at Aireys Inlet, 1886, including the type of *Stereum floriforme* Bres. ex Lloyd (1913). There are also Berthon specimens at BM and W, presumably forwarded to Europe by M. In 1915, Lily moved to 'The Wattles', a cottage in Airey's Inlet where she died in 1946 aged 83. Lily did not marry.

***MELISR:*** 5 specimens. Miss Berthan/ L. Berthon. ***References:*** ABC ('Berthan [Berktan], L., Miss'); Lloyd, C.G. (1913). *Synopsis of the stipitate stereums*. Cincinnati, p. 24; *Argus* (29 June 1901: 9, father's death); *Argus* (14 May 1903: 1, mother's death); Airey's Inlet (<www.aireys-inlet.net.au/history.html>, viewed 2013); Feather, K. (2011). Historic artist – Lily Berthon. *Newsangle* April: 27. ***Map:*** Appendix 3.

**BEST, E.A.**, fl. 1878, coll. WA. Probably Ellen Ann Best née Prince (c.1842 – 1 June 1914). Born, one of at least two children, to Thomas Prince and Elizabeth née Truslove. In 1860, Ellen married a settler, George Best (1832–1915), and they had twelve children. The Bests lived in the Northam district at Wongamine, followed by Toodyay, and then Leederville. Ellen collected MEL specimens at Beverley and Youarding near Toodyay, 1878. She died on 1 June 1914, WA, aged 71.

***MELISR:*** 23 specimens. E.A. Best. ***References:*** ABC ('Best, Ellen Ann'); WA-BDM (viewed 2011); *West Australian* (20 May 1884: 2, husband applies for Hawker's license); *West Australian* (5 June 1914: 5, death); *West Australian* (19 June 1914: 7, probate); *West Australian* (23 March 1937: 1). ***Portrait:*** *Western Mail* (12 December 1908: 26). ***Map:*** Appendix 3.

**BIBRA, Jane Charlotte von née Gill**, c.1822 – 13 January 1882, coll. WA. In 1839, Jane married the settler Charles von Bibra (c.1815–1875) in Tas. They moved to WA in 1840 and took up 'Murchison House Station' north-east of Champion Bay. M's collector Augustus Oldfield visited the station in 1859 and Jane gave him a specimen that became the type of *Halgania bebrana* F.Muell. (1859), which was named for her. Jane is not known to have collected any other MEL specimens. In 1882, she died in Perth aged 60.

***MELISR:*** 1 specimen. Mad. van Bebra. ***References:*** Nyman, L. & Bibra, G. van (1996). *The van Bibra Story*. Launceston; *West Australian* (20 January 1882: 2, death). ***Mueller publications:*** 859.12.01 (eponymy). ***Portrait:*** *Sunday Times* (21 September 1919: 15 (c.1865).

**BIDDULPH, Alice Caroline** (later Mrs Wells), 1873–1971, coll. Qld. Born in Qld, one of nine children, to a pastoralist Walter John Biddulph (d.1905), and Harriette Sophia née Foot (1839–1940). The Biddulphs ran 'Mount Playfair Station', 1878–1903, and then 'Birtley Station' near Springsure. Alice collected (numbered) MEL specimens (as 'Miss Biddulph') at 'Cungelella Station', 'Mount Playfair Station', Nogoa River, Springsure, Springsure Creek, and Tambo, 1890. Alice's sister Florence Frances Biddulph, mother Harriette Sophia Biddulph, and aunts, Ellen Caroline Biddulph and Ada Foot, also collected MEL specimens. In 1904, Alice married a grazier, Edward Dunbar Wells (1877–1954), at 'Birtley Station'. The Wells moved to WA, where Alice's husband managed 'Oobagooma Station' on the Robinson River for three years. On returning to the Springsure district in Qld, the Wells bred race horses. Alice's two daughters were both born in Qld. Alice died in Qld in 1971 in her 98th year.

***MELISR:*** Some of the 106 specimens labelled 'Miss Biddulph'. [Other of Alice's unmarried sisters also probably collected MEL specimens. In 1890 they included Mary Ellen Biddulph (1867–1957, later Mrs Henry John Bredhauer), Anna Sophie Biddulph (1871–1964, later Mrs John Cunningham Wells), and Lucy Maud Biddulph (1876–1923, later Mrs James Wells).] Harriette's sister Ellen Caroline Biddulph also collected MEL specimens in 1890, but she had only one infant daughter at the time, who therefore could not have been 'Miss Biddulph'. ***References:*** Qld-BDM (viewed 2013); *Morning Bulletin* (10 June 1954: 3; *Central Queensland Herold* (17 June 1954: 29, husband's obituaries). ***Handwriting:*** MEL 0100995A (specimen numbered 103) (Appendix 2). ***Map:*** Appendix 3.

**BIDDULPH, Ellen Caroline** née Foot, 1855 – 22 November 1917, coll. Qld. Born in Singleton, NSW, the seventh of nine children, to settlers Theophilus Bournet Foot (c.1811–1896) and Ellen née Nesbit (c.1819–1908). In 1862, the family moved to Qld and ran 'Moravia Downs', and then 'Warrinilla Station'. In 1882, Ellen married Frederick Walter Biddulph (1855–1898) of 'Mount Playfair Station', and they had seven children. Ellen collected MEL specimens at 'Cungelella Station', Nogoa, Nogoa River, and Springsure, 1890. Ellen's sister Harriette Sophia Biddulph, nieces Alice Caroline Biddulph and Florence Frances Biddulph, and sister-in-law Ada Foot also collected MEL specimens. In 1917, Ellen died in the Springsure Hospital after a month's illness at the age of 62.

***MELISR:*** 339 specimens. Mrs E.C. Biddulph/ E.C. Biddulph/ Mrs Biddulph/ Miss E.C. Biddulph/ Biddulph. ***References:*** ABC

('Biddulph, Harriette Sophia'); *Brisbone Courier* (17 June 1882: 1, marriage); *Morning Bulletin*, Rockhampton (23 November 1917: 1, death); *Morning Bulletin*, Rockhamptan (30 July 1948: 3, husband's obituary); Qld-BDM (viewed 2011). ***Map:*** Appendix 3.

**BIDDULPH, Florence Frances** (Miss), 9 February 1879 – S May 1964, coll. Qld. Born in Qld, one of nine children, to a pastoralist, Walter John Biddulph (d.1905), and Harriette Sophia née Foot (1B39–1940). The Biddulphs ran 'Mount Playfair Station', 1878–1903, and then 'Birtley Station' near Springsure. Florence collected (numbered) MEL specimens (as 'Miss F. Biddulph' and 'Miss Biddulph') at 'Cungelella Station', 'Mount Playfair Station', Nogoa River, Springsure, Springsure Creek, and Tambo, 1890. Florence's sister Alice Caroline Biddulph, mother Harriette Sophia Biddulph, and aunts, Ellen Caroline Biddulph and Ada Foot, also collected MEL specimens. Florence died in Brisbane in 1964 aged 8S. She did not marry.

***MELISR:*** 9 specimens as Miss F. Biddulph, and some of the 106 specimens labelled 'Miss Biddulph'. [Other of Florence's unmarried sisters also probably collected MEL specimens as 'Miss Biddulph'. In 1890 they included Mary Ellen Biddulph (1867–1957, later Mrs Henry John Bredhauer), Anna Sophie Biddulph (1871–1964, later Mrs John Cunningham Wells), and Lucy Maud Biddulph (1876–1923, later Mrs James Wells).] ***References:*** Qld-BDM (viewed 2014); *Morning Bulletin* (10 June 1954: 3); *Central Queensland Herold* (17 June 1954: 29, husband's obituaries). ***Handwriting:*** MEL 0072362A (Appendix 2). ***Map:*** Appendix 3.

**BIDDULPH, Harriette Sophia** née Foot, 22 September 1839 – 11 September 1940, coll. Qld. Born in NSW, the first of nine children, to settlers Theophilus Bournet Foot (c.1811–1896) and Ellen née Nesbit (c.1819–1908). Harriette attended school in Sydney. In 1862, the family moved to Qld and ran 'Moravia Downs', and then 'Warrinilla Station'. In 186S, Harriette married Walter John Biddulph (d.190S), manager of 'Windah Station', and they had nine children. The Biddulphs ran 'Mount Playfair Station', 1878–1903, and then 'Birtley Station' near Springsure. Harriette collected MEL specimens at 'Cungelella Station', 1890, and 'Mount Playfair Station', 1890–1896. She collected types of *Astrotricha biddulphiana* F.Muell. (1890), *Hemigenia biddulphiana* F.Muell. (1890), named for her, and *Grevillea cyranostigma* McGill. (197S). There are also Harriette Biddulph specimens at BRI, K, NSW and P, presumably forwarded by M. M gave her an inscribed copy of his *Select extra-tropical plants* (1885). Harriette's sister Ellen Caroline Biddulph, daughters Auce Caroline Biddulph and Florence Frances Biddulph, and sister-in-law, Ada Foot, also collected MEL specimens. Harriette died at 'Birtley Station' in 1940 aged 100 years and 11 months. One letter from Harriette to Mueller survives.

***MELISR:*** 406 specimens. Mrs Harriette Biddulph/ Mrs H. Biddulph/ H.S. Biddulph/ H. Biddulph/ Mrs Biddulph/ Biddulph. ***References:*** ABC ('Biddulph, Harriette Sophia'); McKay, J. (1997). *Brilliont careers*. Queensland Museum: Brisbane; NSW-BDM (viewed 2011); Qld-BDM (viewed 2011); *Brisbone Courier-Mail* (14 September 1940: 18, death). ***Mueller publicatians:*** B90.09.02, B90.12.01 (eponymy). ***Mueller Praject letters:*** L91.00.00, L93.10.26 from Biddulph. ***Partroit:*** McKay (1997) (Appendix 1). ***Handwriting:*** RB MSS M1, RBG Melbourne (Appendix 2). ***Map:*** Appendix 3.

**BOASE, Isabella** née Cameron, c.1849 – 14 March 1932, coll. Vic. Born, one of nine children, to Angus Cameron (c.1819–1894) and Ann née Livingston (c.1819–1892). The Camerons migrated to Geelong, Vic. in 18S3, and were pioneers in the Wimmera where Isabella's father established a blacksmithing business in Horsham from 1861. In 1881, Isabella married Edwin Boase (d.1911), proprietor of the *Dunmunkle Standard* of Murtoa. They did not have any children. Isabella collected MEL specimens (as 'Miss Isab. Boase') at Murtoa, 1889–1891. After her husband's death in 1911, Isabella took over the management of the *Dunmunkle Standard*. She retired to Melbourne in 1928 and died there in 1932 aged 83.

***MELISR:*** 15 specimens. Miss Isab. Boase/ Miss I. Boase. ***References:*** ABC ('Boase, I.'); Indexes to Victorian BDM records, State Library of Victoria; *Argus* (11 November 1881: 1, marriage); *Horsham Times* (28 October 1B92: 2, mother's death); *Horsham Times* (5 October 1B94: 3, father's death); *Harshom Times* (14 July 1911: 4, husband's death); *Horshom Times* (15 March 1932: 8, obituary). ***Map:*** Appendix 3.

**BOWEN, Eliza Theresa** née Campbell, August 1848 – 30 April 1939, coll. Tas. Born in England to John and Margaret Campbell. The Campbells were settlers at 'Breadalbane', upper Piper River, Tas. In 1876, Eliza married Samuel Bowen (c.1841–1883) of 'Tregaron', Cape Portland, and they had at least five children. Eliza collected MEL specimens at 'Tregaron', Cape Portland, 1883–1887. Her husband also collected MEL specimens. In 1939, Eliza died at 'Tregaron' aged 90.

***MELISR:*** 17 specimens. Mrs E. Bowen/ Mrs Bowen. ***References:*** ABC ('Bowen, E., Mrs'); *Lounceston Examiner* (12 June 1875: 4, marriage); *Lounceston Examiner* (27 February 1883: 1, husband's death); *Exominer* (B August 1938: 5, 90th birthday); *Exominer* (2 May 1939: 6, obituary). ***Mop:*** Appendix 3.

**BOWKETT, (Mrs)** *see* **Lamont, Eva Frances**

**BROOKS, Sarah Theresa** (Miss), 19 September 1850 – 23 September 1928, coll. WA. Born in England, the second of two children, to Henry Ferby Brooks (d.1851) and Emily Henrietta née Donovan (c.1833–1911). The Brooks migrated to Vic. in 1851, and settled in Geelong after the death of Henry Brooks. The Brooks moved to WA in 1874 and took up land at Port Malcolm where they built the residence 'Marlburnup'. In 1877, the Brooks moved to Israelite Bay and lived in 'Waratah' cottage. Sarah responded to a call for collectors placed by M in the *West Australian*, and collected MEL specimens (including fungi) at Israelite Bay, 1883–1893; Mount Ragged, 1886; and Hampton Plains, 1890. She collected types of *Scaevola brookeono* F.Muell. (1884), *Hokeo brookeana* F.Muell. (1886), *Meloleuca seorsifloro* F.Muell. (1886), *Holorogis pycnostochyo* F.Muell. (1887), and *Lycoperdon stellotum* Cooke & Massee (1887), two of which were named for her. Mordecai Cooke and George Massee identified Sarah's fungal specimens for M. Sarah's brother (John Paul Brooks) also collected MEL specimens. There are also Sarah Brooks specimens at NSW and PERTH. After Sarah's house in Israelite Bay burned down in 1898, she moved in with her mother and brother at 'Balbinia Station'. She never married and died in Norseman in 1928 aged 78. One letter from Sarah to M survives.

***MELISR:*** 930 specimens. Miss S. Brooks/ S. Brooks/ Miss Brooks/ Brooks/ Miss S. Brooke/ S.T. Brooke/ Miss Brooke/ Brooke/ Miss Brookes. ***References:*** ABC ('Brooks, Sarah Theresa', 'Brooks, John Paul'); Archer, B. & Maroske, S. (1996). Sarah Brooks – plant collector for Ferdinand Mueller. *Victorian Naturalist* **113**: 188–94; Cooke (1887: 97). ***Mueller publicatians:*** BB4.12.02, B86.11.01 (eponymy). ***Mueller Project letters:*** LB3.11.05 from Brooks. ***Partrait:*** Archer & Maroske (1996). ***Handwriting:*** RB M55 M1, RBG Melbourne (Appendix 2). ***Map:*** Appendix 3.

**BROTHERTON, Anna Mary Winifred** (Miss), 1874–1956, coll. Vic. Born in Melbourne, the youngest of four children, to a clerk, Henry Brotherton, and Jane née Hodgkins (c.1835–1916). The family moved to the residence 'Woodlands' at Castlemaine after Anna's father retired in 1887. Anna collected MEL specimens at Barkers Creek, Loddon River, Castlemaine, and summit of Mount Alexander, 1894–1895. She was honorary secretary of the Castlemaine Field Rambler's Club. M was acquainted with Anna's father. Anna did not marry, and died in 1956 at the age of 82. Three sheets of specimen identifications in M's hand, an envelope addressed by M to Anna, and two letters from M to Anna survive.

***MELISR:*** 46 specimens. A.W. Brotherton/ Miss Brotherton/ Brotherton. ***References:*** ABC ('Brotherton, A.W.'); Indexes to Victorian BDM records, State Library of Victoria; *Argus* (16 March 1858: 5, parents' marriage); *Argus* (3 June 1886: 5, father's retirement); *Sydney Morning Herald* (31 May 1916: 10, mother's death). ***Mueller Project letters:*** L94.00.00, L94.00.00, L94.00.00 (lists of identifications); L94.10.21, L94.11.17 from M; L95.01.12 envelope. ***Map:*** Appendix 3.

**BROWN, (Mrs John)**, fl. 1895, coll. NSW. Collected MEL specimens at Castlereagh River, 1895. Forwarded to M by Georgina King who also collected MEL specimens.

***MELISR:*** 7 specimens. Mrs John Brown/ Mrs John Brown, Miss Georgina King. ***References:*** ABC ('Brown, Mrs John'). ***Map:*** Appendix 3.

**BRUMBY, Rebecca** (Miss), fl. 1885–1895, coll. NSW, Vic. Rebecca collected (numbered) MEL specimens in NSW at the Castlegreah River, 1885; 'Coonimbia Station', Coonamble, October 1885; and Uralla, 1886; and, in Vic., at the Goulburn River, 1887–1889; Tallarook, 1888; upper Goulburn River, 1889; Ovens River 1889, 1895; and 'Worrough', Tallarook, 1889.

***MELISR:*** 61 specimens. Miss Rebecca Brumby/ Rebecca Brumby/ Miss Reb. Brumby/ Miss R. Brumby/ R. Brumby/ Miss Brumby. ***References:*** ABC ('Brumby, R., Miss'). ***Map:*** Appendix 3.

**BRUNDOCH, (Miss)**, fl. 1885, coll. NSW. Collected a MEL specimen on the upper Clarence River, 1885.

***MELISR:*** 1 specimen. Miss Brundoch. ***References:*** ABC ('Brundoch, Miss'). ***Map:*** Appendix 3.

**BUCK, E.**, fl. 1893, coll. SA. Possibly Elizabeth Buck née Harman (1827–1905). Born on 26 September 1827 in Lewes, England, Elizabeth arrived in SA in 1839. Her husband, William Henry Buck (c.1822–1906), was a mariner at Kingscote. Elizabeth possibly collected a MEL specimen (as 'E. Buck') on Kangaroo Island, 1893. She died at Port Adelaide on 18 August 1905 in her 78th year.

***MELISR:*** 1 specimen. E. Buck. ***References:*** ABC ('Buck, E. [possibly Elizabeth née Harman]'); Indexes to Victorian & South Australian BDM records, State Library of Victoria. ***Map:*** Appendix 3.

**BULLOCK, Katherine Sarah** née Baker, d. 14 May 1907, coll. Vic., NSW. In 1855, in Geelong, Katherine married a businessman, Richard Henry Bullock (c.1819–1890), and they had at least six children. The Bullocks moved to Horsham in c.1876 where Katherine's husband worked as manager of a fellmongery, official assignee and deputy-registrar of births and deaths, and a general commission

agent. Katherine collected MEL specimens at the Warrego River and Upper Darling River, NSW, 1885 (presumably visiting her son Philip Steel Bullock who also probably collected MEL specimens), and in the Wimmera, Vic., 1886. Katherine died in 1907 in St Kilda.

***MELISR:*** 35 specimens. Mrs Bullock/ K.S. Bullock. ***References:*** ABC ('Bullock, K. [P.] S., Mrs'); Index to Victorian BDM records, State Library of Victoria; *Argus* (30 December 1880: 1, death of son Frank); *Horsham Times* (16 September 1890: 2, husband's obituary); *Argus* (15 May 1907: 1, death).

**BUNBURY, Diana Richardson** (Miss), 1811 – 5 October 1898, coll. WA. Born in Ireland, one of six children, to Sir James M. Richardson Bunbury (1781–1851) and Margaret née Moutray (1795–1873). In 1855, Diana and some members of her family followed a brother, William, to WA. They settled at the residence 'Charterhouse', Picton. Diana sent seeds to the Glasnevin Botanic Garden, 1859–1872, and collected MEL specimens at Bunbury, Geographe Bay, and Picton, including algae, 1874–1890. MEL specimens probably collected by Mervyn Bunbury at Gascoyne River and Shark Bay have been attributed to Diana, including by M (e.g. MEL1061413, MEL1553162 where M corrects his mistake). Diana collected the type of *Thamnoclonium bunburyense* Agardh (1876), named for her. Mervyn Bunbury probably collected the type of *Atriplex bunburyanum* F.Muell. (1882), named for him. There are also Diana Bunbury specimens at BM and K ('Miss Bunbury', 1887–1894, 94 specimens). Along with a 'Mrs Cooper', Diana exhibited a collection of dried flowers from the south-west of the colony in the WA court of the Melbourne International Exhibition, 1880–1881. Diana never married, and died in WA in 1898 at the age of 87. One letter from Diana to M survives.

***MELISR:*** 451 specimens. Miss Bunbury/ Bunbury/ Mrs Bunbury. ***References:*** ABC ('Bunbury, Diana Richardson', 'Bunbury, Mervyn'); DAAO (viewed 2011); *West Australian* (7 October 1898: 2, 'Death of Miss Bunbury'); Jackson (1901, K specimens). ***Mueller publicatians:*** BB2.12.04 (eponymy). ***Mueller Project letters:*** LB0.02.24 from Bunbury; LB2.11.22 from Agardh. ***Partrait:*** Diana Bunbury, c.1895, 5130B, State Library of Western Australia (Appendix 1). ***Handwriting:*** RB MSS M1, RBG Melbourne (Appendix 2). ***Map:*** Appendix 3.

**BURKITT, Ellen Gaskin** née Carige, c.1840 – 16 July 1916, coll. SA. Born in Benalla, Vic., one of at least four children, to a court official, Henry Carige (c.1801–1882), and Mary Willey née Gaskin (c.1813–1911). In 1870, Ellen married William Christopher Burkitt (c.1838–1908), a settler from SA, and they had four children. Ellen's husband ran 'Tinga Tingana' (or Tingatingarna), 'Ediacara', and 'Montpena' sheep stations, and was stock inspector for Mr L. Conrad and the Walkerville District Council. Ellen collected MEL specimens near Lake Blanche, near Lake Torrens, and at 'Tingatingarna Station', 1884–1885. Her husband also collected MEL specimens. In 1937, Ellen died in Penola of bronchitis at the age of 76. One letter from Ellen to M, and one letter from M to Ellen survive.

***MELISR:*** 41 specimens. E.G. Burkitt/ Mrs W.C. Burkitt/ Mrs Burkitt. ***References:*** ABC (see 'Burkitt, W.C.'); Indexes to Victorian & South Australian BDM records, State Library of Victoria; *Advertiser* (7 July 1908: 6, husband's death). *Advertiser* (19 July 1914: 6, death). ***Mueller Project letters:*** LB4.07.16 from Burkitt; L95.03.04 to Burkitt. ***Handwriting:*** RB MSS M1, RBG Melbourne (Appendix 2). ***Map:*** Appendix 3.

**BURNS, [Cl.]** (Miss), fl. 1890, coll. Vic. Collected MEL specimens at Richardson River, 1890.

***MELISR:*** 2 specimens. Miss [Cl.] Burns/ Miss Burns.

**BUSSELL, Charlotte Harriet** (later Mrs MacLeod), 6 June 1858 – 1926, coll. WA. Born in WA, the fifth of eleven children, to settlers Alfred Pickmore Bussell (1816–1882) and Ellen née Heppingstone (d.1877). The family ran the cattle stations 'Broadwater', and 'Ellensbrook' on the Margaret River, where they built 'Wallcliffe House'. Charlotte collected MEL specimens at Geographe Bay, 1878, and 'Wallcliffe', n.d. Either she, or her sister, Edith Agnes Bussell, collected the type of *Boronia busselliana* F.Muell. (1875), at Geographe Bay, named for 'Miss Bussell'. Charlotte's cousin Josephine Bussell also collected MEL specimens. In 1879, Charlotte married Donald Norman McLeod (1848–1914) of 'Chiritta Station', Nicol Bay, and they had six sons and six daughters. Between 1882 and 1889 the family lived at 'Yannarie Estate' near Portland Vic., then returned to WA and lived at 'Minilya Station' near Carnarvon. Charlotte died at the Majestic Hotel in Perth in 1926 aged 68.

***MELISR:*** 1 specimen as C.H. Bussell, and some of the 127 specimens labelled 'Miss Bussell' (Wallcliffe House, n.d.). ***References:*** ABC ('Bussell, Charlotte Harriet'); ADB ('Alfred Pickmore Bussell', & 'Donald Norman MacLeod', viewed 2011); WA-BDM (viewed 2011); *West Australian* (2 September 1926: 1, death). ***Mueller publicatians:*** B75.08.01 (eponymy). ***Partrait:*** D.N. MacLeod & family, c.1910, 5300B, State Library of Western Australia. ***Map:*** Appendix 3.

**BUSSELL, Charlotte Josephine** (later Mrs Prinsep), 30 August 1849 – 24 December 1929, coll. WA. Born at Cattle Chosen, WA, the youngest of four daughters, to a settler, John Garrett Bussell (1803–1875), and Frances née Yates. The family lived at Cattle Chosen in the Vasse district, although in 1864 Josephine's father taught classics at Hale School,

Perth. Josephine collected a MEL specimen at Warren River, n.d. Josephine's cousins Charlotte Harriet Bussell and Edith Agnes Bussell also collected MEL specimens. In 1868, Josephine married Henry (Harry) Charles Prinsep (1844–1922), estate manager, public servant and artist. They had three daughters. Josephine died at Little Holland House on Christmas Eve in 1929 aged 80.

***MELISR:*** 1 specimen. Miss Josephine Bussell. ***References:*** ADB ('Bussell, John Garrett', 'Prinsep, Henry Charles', viewed 2014); J S Battye Library Private Archives (<http://www.liswa.wa.gov.au/pdf/mn/bussell/bussell_charlotte_josephine.pdf>); *Western Mail* (2 January 1930: 37, obituary). ***Portrait:*** *Western Mail* (2 January 1930: 37). ***Map:*** Appendix 3.

**BUSSELL, Edith Agnes** (Miss), 1854–1939, coll. WA. Born in WA, the second of eleven children, to settlers Alfred Pickmore Bussell (1816–1882) and Ellen née Heppingstone (d.1877). The family ran the cattle stations 'Broadwater', and 'Ellensbrook' on the Margaret River, where they built 'Wallcliffe House'. Edith collected MEL specimens at Geographe Bay, 1885, 1892. Either she, or her sister, Charlotte Harriet Bussell, collected the type of *Boronia busselliono* F.Muell. (1875) at Geographe Bay, named for 'Miss Bussell'. Edith's cousin Josephine Bussell also collected MEL specimens. Edith never married and died in 1939 in Perth aged 85.

***MELISR:*** 1 specimen as E.A. Bussell, and some of the 127 specimens labelled 'Miss Bussell' (Wallcliffe House, n.d.). ***References:*** ABC ('Bussell, Charlotte Harriet'); WA-BDM (viewed 2011). ***Mueller publications:*** B75.08.01 (eponymy). ***Handwriting:*** MEL 2254524A (Appendix 2). ***Mop:*** Appendix 3.

**BUTLER, Amy S.** (Miss), fl. 1889, coll. Vic. Amy was a teacher at 'Holstein House', a ladies' college in South Yarra, Vic. She collected a MEL specimen at Windsor, 1889. One letter from Amy to M survives.

***MELISR:*** 1 specimen. Amy S. Butler. ***References:*** Theobald, M.R. (1996). *Knowing women: origins of women's educotion nineteenth century Australio*. CUP: Cambridge. ***Mueller Project letters:*** L89.08.12 from Butler (letter head 'Holstein House'). ***Handwriting:*** RB MS5 M1, RBG Melbourne (Appendix 2). ***Mop:*** Appendix 3.

**BUTLER, Ann** (Miss), fl. 1887–1888, NSW. Collected MEL specimens at the Dumaresq River near Qld, and upper Macintyre River, 1887; and at Coolamon [Creek], 1888.

***MELISR:*** 23 specimens. Miss A. Butler, Miss Ann Butler. ***References:*** ABC ('Butler, Annie'). ***Map:*** Appendix 3.

**CALVERT, (Mrs)** see **Atkinson, Caroline *Louisa* Waring**

**CAMPBELL, Flora Mary** (later Mrs Martin), 22 February 1845 – 13 March March 1923, coll. Vic., NSW, Qld. Born in Tas., one of four children, to pioneer Victorian colonist, whaler and trader, Captain Alexander Campbell (1805–1891), and Ann née Coulson. The Campbells established themselves in Port Fairy, where Flora's father had built a house for his sisters. In 1851, Flora's father was appointed the first harbourmaster of the Port of Melbourne and held this position until his retirement in 1869. In c.1872, the family established a grazing property at Fulham, Gippsland, which was successful. Flora, her sister, Ann, and her parents visited Scotland, 1877–1879. The family spent a few more years in Fulham before moving to South Yarra. Flora was an early member of the FNCV with a special interest in cryptogams.

Flora collected MEL specimens (as 'Miss Flora Campbell') in Vic. at Fulham, 1880; Hume River, 1881, 1887; Brighton, 1883; Grampians 1883–1884; Buffalo Range, 1884; Lake Deepwater, 1884; Lakes Entrance, 1884; Mount Hotham, 1884–1886; Upper Yarra, 1884; Domain (South Yarra), 1885; Dandenong Ranges, 1885; Heyfield, 1885; Oakleigh, 1885, 1887; Seaton, 1885; Penshurst, 1886; Port Phillip, 1886; Lilydale, 1887, 1889–1890; Mordialloc, 1887; Macedon, 1889; and Ararat, north Bogong area, Fernshaw, Mitta Mitta, Mounta Macedon, Ovens River, Sandringham, and Snowy River, n.d.; in NSW, at Mount Kosciuszko, 1881; Tooma Rapids and Uralla, 1882; Bourke, 1884; and, in Tas., at the Tamar River and Thorpe, 1885. Many of Flora's specimens bear the labels of F.M. Reader, or are in his handwriting.

In 1888, Flora was employed by the Department of Agriculture to investigate the hop-spider in Gippsland. Later in the year she married a widower, William Martin (c.1830–1909), a contractor from Brighton. They did not have any children. They established a grazing property at 'Weebar', near Drouin, c.1892. Flora collected MEL specimens (as 'Mrs Flora Martin') in Vic. at Beaconsfield, Kiewa, Serviceton and Trevethan Creek, 1889; and at Korumburra and Watts River, 1891; and, in Qld, Cairns, 1890.

Flora collected types of *Goodenio pusillifloro* F.Muell. (1888), *Dicronum senex* Müll.Hal. (1897), and the following fungi: *Sphoeropsis eucalypti* Berk. & Broome (1887), *Tremello microscopica* Berk. & Broome (1887), *Tympanis toomonsis* Berk. & Broome (1887), *Agaricus prasinus* Cooke & Massee (1889), *Agoricus pulchellus* Cooke & Massee (1889), *Aulographum eucolypti* Cooke & Massee (1889), *Bovista onomolo* Cooke & Massee (1889), *Cercospora daviesioe* Cooke & Massee (1889), *Cercosporo eucolypti* Cooke & Massee (1889), *Gloeosporium hedycaryoe* Cooke & Massee (1889), *Leptothyrium eucolyptorum* Cooke & Massee (1889),

*Phoma daviesiae* Cooke & Massee (1889), *Polystigmina* subgen. *Martinella* Cooke & Massee (1889), named for her, *Palystigmina eucalypti* Coake & Massee (1889), *Stictis emarginata* Coake & Massee (1889), *Thelephora stereoides* Cooke & Massee (1889), *Agaricus flavavirens* Cooke & Massee (1890), *Agaricus ruber* Cooke & Massee (1890), *Asteramella acaciae* Cooke (1890), *Campbellia* Caoke (1890), named for her, *Diploderma pachythrix* Cooke & Massee (1890), *Dothidea rugulosa* Cooke (1890), *Marssania acaciae* Cooke & Massee (1890), *Pestalozziella circularis* Cooke & Massee (1890), *Phacidium rhytismoideum* Caake & Massee (1890), *Phyllasticta sariformis* Caake & Massee (1890), *Puccinia rumicis-scutati* var. *muhlenbeckiae* Coake (1890), *Septoria martiniae* Coake (1890), named for her, *Septaria phyllodiorum* Cooke & Massee (1890), *Sphaeropsis phomatoidea* Cooke & Massee (1890), *Zignaella australica* Cooke & Massee (1890), *Agaricus disruptus* Caake & Massee (1891), *Anthostomella lepidospermae* Coake (1891), *Aposphaeria leptospermi* Caoke (1891), *Boletus brunneus* Cooke & Massee (1891), *Bovista hypagaea* Coake & Massee (1891), *Cercospora epicaccaides* Cooke & Massee (1891), *Cercaspora kennediae* Caake & Massee (1891), *Coniosparium pterospermum* Caoke & Massee (1891), *Corticium penetrans* Cooke & Massee (1891), *Carticium sulphurellum* Cooke & Massee (1891), *Didymosphaeria banksiae* Cooke (1891), *Dothidella inaequalis* Caake (1891), *Dathiorella amygdali* Cooke & Massee (1891), *Gloeosporium citri* Cooke & Massee (1891), *Lasiosphaeria larvispora* Cooke & Massee (1891), *Leptostromella eucalypti* Caake & Massee (1891), *Leptothyrium aristatum* Cooke (1891), *Marssonia defarmans* Caoke & Massee (1891), *Melaphia phyllachoroidea* Cooke (1891), *Merulius pelliculosus* Cooke (1891), *Mantagnella rugulosa* Coake (1891), *Phyllachara maculata* Coake (1891), *Phyllasticta platylobii* Caake & Massee (1891), *Physalospara microstricta* Cooke (1891), *Piggotia substellata* Cooke (1891), *Polysaccum album* Cooke & Massee (1891), *Septoria lepidospermatis* Cooke & Massee (1891), *Sphaerella cryptica* Cooke (1891), *Sphaerella nubilasa* Cooke (1891), *Stagonaspora orbicularis* Cooke (1891), *Stilbospora foliarum* Cooke (1891), *Stillbum caninum* Coake & Massee (1891), *Stillbum corallinum* Caake & Massee (1891), *Strabilamyces fasciculatus* Coake (1891), *Strobilamyces ligulatus* Coake (1891), *Strumella patelloidea* Coake & Massee (1891), *Trabutia parvicapsa* Coake (1891), *Trabutia phyllodii* Caake & Massee (1891), *Zignaella erumpens* Cooke (1891), *Agaricus cyathoideus* Cooke & Massee (1892), *Agaricus discretus* Cooke & Massee (1892), *Agaricus griseus* Coake & Massee (1892), *Balbitius candidus* Caoke & Massee (1892), *Daedalea illudens* Cooke & Massee (1892), *Hydnum calcareum* Caoke & Massee (1892), *Hymenula eucalypti* Cooke & Massee (1892), *Lenzites bifasciatus* Cooke & Massee (1892), *Marasmius subraseus* Cooke & Massee (1892), *Manotospora fasciculata* Caake & Massee (1892), *Oaspara rutilans* Caoke & Massee (1892), *Stereum pannosum* Cooke & Massee (1892).

There are also Flara Martin specimens at BRI, E, G, K ('Mrs F.M. Marten', 1889, 28 fungi) and NSW. Flara was the only woman to give a paper at the Australasian Association for the Advancement of Science conference in Melbourne, 1890. She also corresponded with F.M. Bailey, Mordecai Cooke and George Massee, was a fungi artist, and wrote letters to newspapers on fungal diseases and other botanical matters. In 1923, she died at Drauin aged 78 of breast cancer. She left her scientific boaks, instruments and collections to the MacFarland Library, Ormond College, but their whereabouts are no longer knawn. One letter from Flora to M survives.

***MELISR:*** 183 specimens. Miss Flora Campbell/ Miss F.M. Campbell/ Miss F. Campbell/ Miss Campbell/ Campbell/ F.M.C/ Mrs F. Martin/ F.M.M/ Mrs Martin. ***References:*** ABC ('Martin, Flora'); Taylor, A. 'Flora Martin née Campbell: correspondence & notes' (RB MSS 647, RBG Melbourne); Indexes to Victorian BDM records, State Library of Victoria; *Hedwigia* (1897 **6:** 351, moss); *Argus* (27 May 1890: 9, 'The late Captain Campbell'); *Argus* (23 August 1893: 10, letter to editor); *Argus* (23 January 1894: 7); *Argus* (21 November 1895: 6); *Argus* (5 March 1924: 19, bequest); *Victorian Naturalist* (1923 **40**: 104, death); Jackson (1901); *Argus* (11 December 1909: 13, husband's death); Berkeley, M.J. & Broome, C.E. (1887). List of fungi from Queensland and other parts of Australia; with descriptions of new species, part III. *Trans. Linn. Soc. London, Bot., ser. 2* **2**, 217–224; Cooke, M.C. (1889). New Australian fungi. *Grevillea* **18(85)**, 1–8; Cooke, M.C. (1890). Australian fungi. *Grevillea* **18(87)**, 49; Cooke, M.C. (1890). Australian fungi. *Grevillea* **18(87)**, 49–51; Cooke, M.C. (1890). Australian fungi. *Grevillea* **18(88)**, 80–81; Cooke, M.C (1890). Some exotic fungi. *Grevillea* **18(88)**, 87; Cooke, M.C. (1890). Australian fungi. *Grevillea* **19(89)**, 5; Cooke, M.C. (1890). Australian fungi. *Grevillea* **19(90)**, 44–47; Cooke, M.C. (1891). Two Australian fungi. *Grevillea* **19(91)**, 81–83; Cooke, M.C. (1891). Australian fungi. *Grevillea* **19(92)**, 89–92; Cooke, M.C. (1891). Additions to Merulius. *Grevillea* **19(92)**, 108–109. Cooke, M.C. (1891). Australian fungi. *Grevillea* **20(93)**, 4–7; Cooke, M.C. (1891). Australian fungi. *Grevillea* **20(94)**, 35–36; Cooke, M.C. (1892). Australian fungi. *Grevillea* **21(97)**, 35–39. ***Mueller Project letters:*** L87.07.26 from Campbell. ***Handwriting:*** RB MS5 M1, RBG Melbourne (Appendix 2). ***Map:*** Appendix 3.

**CARDELL/CADELL, (Mrs)**, fl. 1886–1897, coll. NSW. Collected MEL specimens at Byrock and Gulargambone, 1886. She collected the type of *Swainsona cadellii* F.Muell.

ex C.Moore & Betche (1893). There are also 'Mrs Cadell' specimens at NSW.

***MELISR:*** 8 specimens. Mrs Cardell/ Mrs Cardells. ***References:*** A8C ('Cadell [Cardell], Mrs'). ***Map:*** Appendix 3.

**CARTER, Sarah** née Hollingdor, c.1819–1882, coll. NSW. In 1837, Sarah married a grazier Robert Carter (c.1800–1889) at Moonan Brook, near Scone, NSW. They had thirteen children (at least one of whom, Sarah *Henriette* Carter, collected MEL specimens). Sarah collected MEL specimens (ferns) at 'Woomelguy', Moonan Brook, 1880. She died in 1882 aged 63 at Roland's Flat.

***MELISR:*** 8 specimens. Mrs Carter. ***References:*** A8C ('Carter, Mrs'); NSW-BDM (viewed 2011); *Maitland Mercury* (4 March 1882: 4, death). ***Map:*** Appendix 3.

**CARTER, Sarah *Henriette*** (Miss), 22 October 1841 – 27 July 192S, coll. NSW. Born at Wybong Creek, NSW, one of thirteen children, to Robert Carter and Sarah née Hollingdor (c.1819–1882). The family lived at the grazing property 'Woomelguy', Moonan Brook near Scone. Henriette collected MEL specimens (including fungi) at the upper Hunter River, 1880, 1882, 1887, 1889; south of the Liverpool Range, 1880; Moonan Brook, 1881–1884; and Stewarts Brook, 1892. She collected types of *Gymnoglossum stiptatum* Massee (1891) and *Pseudocolus rothae* Lloyd (1907). A number of Henriette's brothers and her mother, Sarah Carter, also collected MEL specimens. There are also Henriette Carter specimens at BM, G, and GLAM. Otto Nordstedt identified some of Henriette's specimens of freshwater algae for M, and George Massee identified fungi. After the death of her parents, Henriette lived at 'Woomelguy' with other unmarried siblings. She died at Scone in 192S aged 84. One letter from Henriette to M survives, and a Christmas card from M.

***MELISR:*** 353 specimens. Miss S.H. Carter/ Henriette Carter/ Miss H. Carter/ Miss Carter. ***References:*** ABC ('Carter, Sarah Henriette'); Massee, G. (1B91). New *ar* imperfectly kn*a*wn Gastr*a*mycetes. *Grevillea* **19**, 98; Ll*a*yd, C.G. (1907). The Phall*a*ids *a*f Australasia. *Mycologicol Writings* **2**, 20; *Maitland Mercury* (4 March 1B82: 4, m*a*ther's death); *Sydney Morning Herald* (7 June 1917: 4); *Muswellbraak Chranicle* (31 July 1925: 1, death); NSW-BDM (viewed 2011). ***Mueller Project letters:*** LB2.12.00 t*a* Carter; L84.08.21 fr*a*m Carter; L8S.00.00, L86.04.1S fr*a*m N*a*rdstedt. ***Handwriting:*** RB MSS M1, RBG Melbourne (Appendix 2). ***Map:*** Appendix 3.

**CASTER, (Mrs J.D.)**, fl. 1894, WA. Collected MEL specimens at Southern Cross, 1894.

***MELISR:*** 7 specimens. Mrs J.D. Caster. ***References:*** A8C ('Carter, J.D. [Mrs?] also given as Caster'). ***Map:*** Appendix 3.

**CHAMBERLIN, (Miss)**, fl. 1876, coll. NSW, Vic. Collected MEL specimens (numbered) at 'Tarracutta' (i.e. Tarcutta), NSW, and Rochester, Vic., 1876.

***MELISR:*** 38 specimens. Miss Chamberlin/ Chamberlin. ***References:*** ABC ('Chamberlin, Miss'). ***Handwriting:*** MEL 2177211A (Appendix 2). ***Map:*** Appendix 3.

**CLARK, (Mrs D.R.)**, fl. 1886, coll. Vic. Collected a MEL specimen at Korumburra, 1886.

***MELISR:*** 1 specimen. Mrs D.R. Clark. ***Map:*** Appendix 3.

**CLARKE, (Mrs)** see **Franklyn, Louise Bessy**

**CLAYDON, (Mrs)** see **Bauer, Sophie Wilhelmine *Eleanore* (Ellie)**

**CLEARY, (Miss)**, fl. 1882, coll. Tas. Collected a MEL specimen at Rostrevor, Spring Bay, that was forwarded to M by James Barnard of the Royal Society of Tasmania.

***MELISR:*** n*a* specimens. ***Mueller Project letters:*** L82.07.26 fr*a*m James Barnard.

**CLENDINNING, Martha** (Mrs), 22 February 1822 – 20 January 1908, coll. Vic. Born in Ireland. In 1845, Martha, married a physician, Dr George Clendinning (d. 1876), and they had a daughter in Ireland. The Clendinnings migrated to Vic. in 1853. Martha (and her daughter) followed her husband to the Ballarat diggings and she established a general store at Brown Hill, Golden Point and then Pleasant Creek while her husband practised medicine. The family finally settled in Ballarat where Martha's husband was a physician and coroner. Martha collected MEL specimens at Maldon, 1869, and Ballarat, n.d. After her husband's death, Martha was involved in the establishment of the first female refuge in Ballarat. She died in Melbourne in 1908 aged 86, but was buried in Ballarat.

***MELISR:*** 69 specimens. Mrs Clendinning. ***References:*** Asher, L. (1985). 'Martha Clendinning: A woman's life on the g*a*ldfields', in M. Lake & F. Kelly (eds), *Double time: Women in Victoria 150 Years: A relationship between public and private life*. Penguin B*a*aks: Australia; Bentham (1869: 406, Glendinning [*sic*], Ballarat). ***Mueller publicatians:*** B69.07.03 (Mrs Glendinning [*sic*]). ***Map:*** Appendix 3.

**CONNELL, (Miss)**, fl. 1864, coll. Tas. Collected MEL specimens (algae) at George Town, 1864.

***MELISR:*** 6 specimens. Miss Connell/ Mrs C*a*nnell. ***References:*** A8C ('C*a*nnell, Miss'). ***Map:*** Appendix 3.

**COTTER, Jessie Annie** née Kennedy, 1864 – 29 June 1941, coll. Qld, NSW. Born in NSW, the fifth of eleven children, to settlers Robert Henry Kennedy (1826–189S) and Mary Bozzum née Hume (1838–1915). In 1883, Jessie married Alfred

John Cotter (d.1897) of 'Caiwarro Station', Qld, and they had at least four children. Jessie collected MEL specimens at 'Caiwarro Station', Paroo River, 1885–1887, 1890–1891, Qld; Darling River 1886–1887, NSW; and Warrego River, n.d., Qld/NSW. She collected types of *Kochia spongiocarpa* F.Muell. (1886), and *Helipterum jessenii* F.Muell. (1890). Jessie's husband, mother, Mary Bozzum Kennedy, and sister Miss E. Kennedy also collected MEL specimens. Jessie died in Melbourne in 1941 aged 77.

***MELISR:*** 166 specimens. Mrs Jessie Cotter/ Miss Jessie Cotter/ Jessie A. Cotter/ Mrs J. Cotter/ J. Cotter/ Mrs Cotter/ Cotter. ***References:*** ABC ('Cotter, Jessie, Mrs'); NSW-BDM (viewed 2011). Qld-BDM (viewed 2011); *Argus* (30 June 1941: 4, death). ***Mueller Project letters:*** L91.04.26 from Cotter. ***Portroit:*** 'Jessie Annie Cotter', John Oxley Library, Qld (Appendix 1). ***Hondwriting:*** L91.04.26 from Cotter (MEL 0037099A) (Appendix 2). ***Map:*** Appendix 3.

**COX, Eliza** (later Mrs Dixon), 1830 – 26 April 1897, coll. Tas. Born in Tas., one of at least twelve children, to settlers James Cox (c.1790–1866) and Eliza née Eddington (1809–1865). Eliza was a wildflower and landscape artist in watercolours. She collected two MEL specimens (algae) in Tas., 1864. There are also Eliza Cox (as 'Miss Cox') specimens at BM, BR, CGE and K ('Miss Cox', 1864, 63 specimens). In 1877, she married the Rev. John Cowpland Dixon (1816–1885), curate at Windermere. They did not have any children. After living in England, 1883–1885, Eliza returned to Tas. She died in 1897 aged 67.

***MELISR:*** 2 specimens. Miss Cox. [NB these specimens are both labelled 'Ex Herbarium Hookerianum 1867.] ***References:*** ABC ('Cox, Eliza, Miss'). DAAO (viewed 2011); *Launceston Examiner* (20 March 1866: 4, father's death); *Hobart Mercury* (28 August 1869: 1, mother's death); *Hobart Mercury* (30 April 1877: 1, marriage); *Hobart Mercury* (27 April 1897: 1, death); Jackson (1901, K specimens). ***Portroit:*** State Library of Tasmania (<stors.tas.gov.au/PH30-1-246>) (Appendix 1).

**CRAIGIE, Emma** née Berthoud, 1842 – 1 July 1921, coll. WA. Born in Neuchatel, Switzerland, one of at least two children, to Felicien Berthoud (c.1819–1890) and Helene née Tripet. The Berthouds migrated to Vic. in 1853. They settled at the farming property 'Runnymede' near Elmore. Emma's father communicated with M about experiments in the cultivation of olives and almonds. In 1867, Emma married a farmer, Frank Craigie (c.1825–1896). They lived near Elmore and had nine children. In 1889, the Craigies moved to WA and were pioneer settlers in the Waterloo district where they established the farming property 'Craigie Lea'. Emma collected MEL specimens at Geographe Bay, 1890. Her brother, George Frederick Berthoud, also collected MEL specimens. Emma died at 'Craigie Lea' in 1921 aged 79.

***MELISR:*** 7 specimens. Mrs Craigee/ Mrs F. Craigee. ***References:*** ABC ('Craigie, Mrs', 'Berthoud, George Frederick'); WA-BDM (viewed 2011); Indexes to Victorian BDM records, State Library of Victoria; *Argus* (13 July 1878: 5, 'Runnymede'); *Sundoy Times* (17 July 1921: 3, 'The late Mrs E. Craigie'). ***Portroit:*** *Sundoy Times* (1921) 17 July: 3. ***Mop:*** Appendix 3.

**CRONIN, Margaret** (Miss), fl. 1890, coll. WA. Probably Margaret Cronin (1870–1929). Born in WA, one of nine children, to settlers John Cronin (1841–1926) and Eliza née McKenna (1835–1941). The family established 'Bunkun' farm near Dumbleyung c.1878. Margaret collected MEL specimens (as 'Miss Margaret Cronin') at Lake Wagin, 1890. Margaret's cousin, Mary Ann Cronin, also collected MEL specimens. Some of the specimens attributed to Mary Ann may have been collected by Margaret. Margaret did not marry and died in WA in 1929 aged 59.

***MELISR:*** 3 specimens. Miss Margaret Cronin. ***References:*** Brady Family Tree in Western Australia (<www.bradyfamilytree.org>, viewed 2013); *Sundoy Times* (7 September 1924: 29, Bunkun farm). ***Mop:*** Appendix 3.

**CRONIN, Mary Ann** (later Mrs Walter), 25 January 1871 – 1974, coll. WA. Born at Kojonup, WA, one of ten children, to settlers Michael Cronin (1842–1931) and Elinor Bridget née Noonan (d.1883). The family established a farm at Kojonup in 1861, then Pallinup in 1863, and then the farming property 'Glencoe' near Katanning in 1873. In response to a notice placed in a WA newspaper by M, Mary Ann's father encouraged her to collect MEL specimens. She did so at the sources of the Pallinup River 1887; sources of the Blackwood River, 1888–1890, 1893; upper Blackwood River, 1889; Dumbleyung Lake, 1889; east of Geraldton, 1889; near Lake Wagin 1889–1890, 1895; Bunkin near Wagin, 1890–1891; Lake Wagin, 1890, 1893–1896; King George Sound 1892; between the upper Blackwood River and Lake Lefroy, 1893–1894; Glencoe [now Katanning], 1894; Moorrarrie [?=Moorarie Homestead] 1894; and interior of south-west Australia, 1894. She collected types of *Athrixia croniniana* F.Muell. (1888), named for her, *Styphelia kingiana* F.Muell. (1893) (as 'Mrs Cronin') [current name *Croninia kingiana* (F.Muell.) J.M.Powell (1993)], *Conospermum croniniae* Diels (1904), and *Tetratheca fasciculata* Joy Thomps. (1976). Mary Ann's cousin Eleanor Grover, and probably her cousin Margaret Cronin, also collected MEL specimens. There are also Mary Ann Cronin specimens at NSW and PERTH. In 1907, Mary Ann married John E. Walter (d.1937) a businessman, and they had at least three children. She died in WA in 1974 aged 103.

***MELISR:*** 1219 specimens. Miss Mary Cronin/ Miss M. Cronin/ Miss Cronin/ Mrs Cronin. [NB the 'Mrs Cronin' specimens all postdate the death of Mary's mother.] ***References:*** ABC ('Cronin, Mary Ann', 'Cronin, Michael'); Rica Erickson notes (Willis papers, WILL001100, series 4, Box 1, RBG Melbourne); WA-BDM (viewed 2011); *West Australian* (25 June 1931: 14, father's death); *West Australian* (3 April 1937: 18, husband's death); *West Australian* (26 January 1970: 18, 'Mary Ann Walter Celebrates her 99th Birthday'). ***Mueller publicotions:*** B88.10.01 (eponymy). ***Portroit:*** West Australian Newspapers Ltd. (Appendix 1). ***Mop:*** Appendix 3.

**CROUCH, Maria** née Telforo, fl. 1874–1876, coll. WA. 8orn to a warder, James Telford, and his wife. In 1861, Maria married Charles Crouch, a constable in the water police, in Fremantle, WA. They had three children. Leaving her children in the care of their maternal grandmother, in c.1872, Maria went to Cossack with her husband, where the Crouch brothers established a business as general importers. Maria collected MEL specimens at Nickol 8ay, 1874–1876; Fortescue River and Harding River, 1875; and Champion Bay, 1876. She collected types of *Hedyotis crouchiana* F.Muell. (1876), named for her (as 'Marianna Crouch'), *Trianthema turgidifolia* F.Muell. (1876), and *Bassia astrocarpa* F.Muell. (1882). There are also Maria Crouch specimens at NSW and PERTH.

***MELISR:*** 202 specimens. Mrs M. Crouch/ M.A. Crouch/ M. Crouch/ Mrs Crouch/ Crouch. ***References:*** ABC ('Crouch, Maria'); WA-BDM (viewed 2011); DWA; Rica Erickson notes (Willis papers, WILL001100, series 4, Box 1, RBG Melbourne). ***Mueller publicotions:*** B76.10.01 (eponymy). ***Hondwriting:*** MEL 0663299A (Appendix 2). ***Mop:*** Appendix 3.

**CUMMING, (Mrs),** fl. 1893, coll. Vic. Collected a MEL specimen at Lake Coorong near Hopetoun, 8 May 1893.

***MELISR:*** 1 specimen. Mrs Cumming. ***References:*** ABC ('Cumming, Mrs'). ***Map:*** Appendix 3.

**CURDIE, Frances Niel** née Purves, 12 May 1829 – 25 June 1900, coll. Vic. Born at Thurdistoft, Caithness, Scotland, to James Purves and his wife. In 1853, Frances married Daniel Curdie (1810–1884), a physician and squatter at 'Tandarooke' near Camperdown, Vic. They had ten children. M was a personal friend of the Curdies and stayed at 'Tandarooke' in 1873. Frances collected MEL specimens at Curdies River, 1887–1890, 1896; and Gellibrand 1888–1889. Her husband also collected MEL specimens. Frances died in Vic. in 1900 aged 71. M gave Frances an inscribed copy of E. Cooper (1876) *Forest culture and Eucalyptus trees.*

***MELISR:*** 7 specimens. Mrs Dr Curdie/ Mrs Curdie. ***References:*** ABC ('Curdie, Mrs', 'Curdie, Daniel'); *Comperdown Chronicle* (27 January 1934: 11, husband's obituary). ***Mueller Project letters:*** L84.05.00 to Curdie (inscription). ***Portrait:*** State Library of Victoria (<www.slv.vic.gov.au/pictoria/gid/slv-pic-aab61125>) (Appendix 1). ***Hondwriting:*** MEL 0114771A (Appendix 2). ***Mop:*** Appendix 3.

**DARE, (Miss),** fl. 1889, coll. WA. Collected MEL specimens at Swan River, 1889.

***MELISR:*** 4 specimens. Miss Dare. ***References:*** ABC ('Dare, Miss'). ***Mop:*** Appendix 3.

**DAVEY, Eleanor (Nellie) Alice** (Miss), 4 August 1862 – 29 June 1907, coll. SA. 8orn in Truro, SA, one of two children, to settlers John Davey (c.1869–1933) and Martha Eleanor née Speed. The family took up the farming property 'Waltham', near Honiton, Yorke Peninsula in 1871. Nellie was recruited as a MEL collector by Jessie Hussey. She collected MEL (numbered) specimens (algae) at Encounter 8ay, 1896; and Cape Spencer, 'Kemp 8ay, Investigator Strait' and Spencer Gulf, n.d. She died in 1907 in Adelaide at the age of 45, unmarried. In 1908, her father donated 'a set of seaweed specimens' to the University of Adelaide herbarium. There are also Eleanor Davey (as 'Miss E.A. Davey') specimens at HBG.

***MELISR:*** 10 specimens. Miss E.A. Davey/ E.A. Davey/ Davey. ***References:*** ABC ('Davey, Eleanor Alice'); Indexes to South Australian BDM records, State Library of Victoria; *Advertiser* (2 July 1907: 9, death); *Advertiser* (13 January 1914: 11, father); *Register* (30 March 1908: 3, herbarium); *Register* (4 September 1920: 7, father's death). ***Mueller Project letters:*** L95.05.18 to Agardh. ***Mop:*** Appendix 3.

**DELLAR, (Mrs C.),** fl. 1890–1891, coll. Vic. Collected MEL specimens at Avoca, 1890, 1891.

***MELISR:*** 14 specimens. Mrs C. Dellar/ C. Dellar/ Mrs Dellar. ***References:*** ABC ('Dellar, C., Mrs?'). ***Mop:*** Appendix 3.

**DIETRICH, Konkordia *Amalia*** née Nelle, 26 May 1821 – 9 March 1891, coll. Qld. 8orn in Siebenlehn, Saxony, to Gottlieb Nelle, a leather-worker, and his wife, Cordel. In c.1846, Amalia married Wilhelm August Salomo Dietrich, a lawyer and naturalist, and they had one daughter. After her marriage broke down in 1862, Amalia became a professional natural history collector for the Museum Godeffroy, Hamburg. She travelled to Australia in 1863, and collected MEL specimens around 8risbane, 1863–1864; Gladstone, 1864–1865; Rockhampton, 1864–1866; Mackay, 1867; Lake Elphinstone, 1868; Mackay, 1869; and Bowen (Port Denison), 1869–1870. In 1871, she visited M in Melbourne. M acquired a set of Amalia's specimens in 1881 from Christian Luerssen. Amalia collected types of *Aongstroemia dietrichiae* Müll.Hal. (1868), *Laxmannia illicebrosa* Rchb.f. (1871), *Marsdenia hemiptera*

Reichenbach (1871), *Fissidens dietrichiae* Müll.Hal. (1872), *Macramitrium sardidevirens* Müll.Hal. (1872), *Sargassum aciculare* Grunow (1874), *Sargassum amaliae* Grunaw (1874), *Sargassum gadeffrayi* Grunaw (1874), *Schaenus elatus* Boeck. (1875), *Scirpus dietrichiae* Baeck. (1875), *Scleria dietrichiae* Baeck. (1875), *Scleria novae-hallandiae* Baeck. (1875), *Carex dietrichiae* Boeck. (1875), *Cyperus luerssenii* Boeck. (1875), *Acacia dietrichiana* F.Muell. (1882), *Barbula subcalycina* Müll.Hal. (1882), *Frullania dietrichana* Steph. (1910), *Indigafera amaliae* Damin (1915), *Acacia penninervis* var. *langiracemosa* Domin (1926), *Cryptocarya multicostata* Damin (1926), *Cryptocarya triplinervis* var. *euryphylla* Damin (1926), *Psaralea dietrichiae* Damin (1926), *Swainsana luteala* var. *dietrichiae* Damin (1926), *Tetrastigma nitens* var. *amaliae* Damin (1927), *Plectrania caprasmaides* var. *spathulata* O.Swartz (1927), *Premna benthamiana* Damin (1928), *Hibiscus amaliae* Domin (1930), *Mallatus claoxyloides* f. *grassedentata* Domin (1930), *Mallotus claaxylaides* var. *glabratus* Damin (1930), *Pagetia dietrichiae* Damin (1930), *Persaonia amaliae* Domin (1930), *Cyperus pumilus* var. *nervulasus* Kuk. (1936), *Helichrysum eriacephalum* J.H.Willis (1952). A number af these species were named far her. There are alsa Amalia Dietrich specimens at 8, 8M, 8RSL, H8G, JE, K ('Amalia Dietrich', 1863–1866, 30 specimens), L, MO, P, U5 and W. On her return to Hamburg, Amalia warked far the Museum Gaddefroy. She died in 1891 aged 70.

***MELISR:*** 2790 specimens. Amalia Dietrich/ Amalie Dietrich/ A. Dietrich/ Mrs Dietrich/ Dietrich. ***References:*** ABC ('Dietrich, Konkordia Amalie'); ADB ('Dietrich, Konkordia Amalie', viewed 2011); Amalia Dietrich label (RB MSS 229a), RBG Melbourne. ***Mueller publicatians:*** B82.07.04 (eponymy). ***Mueller Project letters:*** LB2.12.16 to Ralph Tate; LB6.12.07 to Dyer. ***Portrait:*** Wikimedia Commons (Appendix 1). ***Map:*** Appendix 3.

**DIXON, Mary (May)** (later Mrs McArdle), *c.*1874 – 1 September 1950, call. Qld. 8arn in Vic., one af thirteen children, ta settlers William Dixan (c.1837–1892) and Annie née Cady (d.1925). The Dixons maved ta Qld *c.*1866 and ran 'Lanark' and then 'Strasburg' stations near Jericha. Mary callected MEL specimens (as 'Miss May Dixon') at Jericha, 1894, and Alice River, 1896. In 1911, Mary married widawer Thomas McArdle (*c.*1863–1927) of 'Swaylands Station'. They did nat have any children. Mary died in 1950 in her 76th year.

***MELISR:*** 157 specimens. Miss May W. Dixon/ Miss May Dixon/ Miss M.W. Dixon/ Miss Alice Dixon. [NB May's sister Alice Dixon married in 1885 and the 'Miss Alice Dixon' specimen is dated 1B96. There does not seem to be another Alice Dixon in the family tree, and M may have made an error on this label. For a label where he has corrected 'Alice' to 'May' Dixon see RB MSS 229a, RBG Melbourne.] ***References:*** ABC ('Dixon, May [Mary, also given as A., M. W.]'); Rootsweb (<wc.rootsweb.ancestry.com>, viewed 2013, birth, known as 'May'); Qld-BDM (viewed 2012); *Longreach Leader* (2B January 1927: 13, husband's death); *Cairns Post* (9 November 1954: 5, estate). ***Partrait:*** *Queenslander* (11 January 1908: 26, 'The Misses Dixon, of Strasburg Station'). ***Map:*** Appendix 3.

**DONALDSON, Agnes Adelaide** née Elms, 1865 – 11 July 1948, coll. Qld. 8arn in Vic., ane of eight children, ta a pastoralist, Hastings Alfred Elms (1832–1910), and Janet née 8everidge (1838–1899). Agnes went to Qld in the late 1880s as a governess ta the Turnbull family at 'Lansdawne' sheep station near Tambo. In 1890, she married the station averseer, Robert Danaldsan (1850–1939), and they had six children. The family lived at 'Alpha Statian' (where Agnes's husband was manager) and at 'Medway Statian' where he became a part-awner in 1908. Agnes callected MEL specimens at upper 8elyando River, 1890–1891, and 'Alpha Station', 1891. She died at the residence 'Llanmilae', Rockhamptan, in 1947 at the age of 83.

***MELISR:*** 28 specimens. Agnes Donaldson/ Mrs A. Donaldson/ Mrs Donaldson. ***References:*** ABC ('Donaldson, A., Mrs'); Qld-BDM (viewed 2011); Indexes to Victorian BDM records, State Library of Victoria; *Argus* (10 June 1890: 1); *Argus* (1 May 1899: 1, mother's death); *Argus* (24 August 1910: 9); *Morning Bulletin* (2B July 1939: 11, obituary 'Robert Donaldson'); *Morning Bulletin* (14 August 1948: 3, obituary 'Mrs A.D. Donaldson'). ***Map:*** Appendix 3.

**DONOVAN, (Mrs)**, fl. 1896, call. WA. Married William Danavan (1861–1939), a farester in WA. Callected MEL specimens an lawer Murchison River, 1896.

***MELISR:*** 5 specimens. Mrs Donovan/ Mrs Donavan. ***References:*** ABC ('Donovan, William'). ***Map:*** Appendix 3.

**DULHUNTY, Annie** née McKillap, *c.*1843 – 11 July 1934, call. NSW. 8orn near Orange, NSW, ane af nine children, to Duncan McKillap (*c.*1814–1877), a grazier af 'Terra 8ella Statian', and his wife Ann McKay (*c.*1816–1885). In 1874, Annie married Jahn 8elmore Dulhunty (1841–1918), a businessman and magistrate, and they had two daughters. The Dulhuntys settled at the residence 'Monteagle' in 8athurst. Annie callected MEL specimens near the junctian af the Darling and 8agan Rivers, 1888; and an the upper Lachlan River, 1890, 1892. Her husband also collected MEL specimens. On 11 July 1934, Annie died in Sydney of cerebral thrambasis aged 91.

***MELISR:*** 11 specimens. Mrs Ann Dulhunty/ Mrs Dulhunty/ Dulhunty. ***References:*** ABC ('Dulhunty. Mrs A., J.A. J.B.'); NSW Death Certificate (1934/011177 Annie Dulhunty); NSW-BDM (viewed 2012); *Maitland Mercury* (30 October 1B77: 3, obituary father);

*Sydney Morning Herald* (21 August 1918: 10, husband's death). ***Map:*** Appendix 3.

**DUMARESQ, (Mrs)**, fl. 1869, coll. Tas. Probably Charlotte Dumaresq née Newberry (1807–1892). Charlotte was born in England where she married John Barrett Fogg (1807–1852), a landed gentleman, and they had eight children. In 1850, Charlotte migrated with seven of her children to Launceston, Tas. Her husband went to Vic. and died at Ovens goldfields. In 1856, Charlotte married Edward Dumaresq (1802–1906), a surveyor and settler at 'Mount Ireh' estate near Longford Tas. The marriage failed, but in 1864 she sought action in the courts for financial support, and Dumaresq agreed to pay her £300 per year. Charlotte probably collected MEL specimens (as 'Mrs Dumaresq') at George Town, 1869. Her daughter, Sarah Ann Fogg (1829–1922), was a watercolourist, and exhibited paintings of Tasmanian wildflowers at the Paris Universal Exhibition of 1855. Charlotte died in 1892 in her 85th year.

***MELISR:*** 4 specimens. Mrs Dumaresq. ***References:*** ABC ('Dumaresq, Mrs' possibly connected to Edward Dumaresq); DAAO ('Sarah Ann Fogg', viewed 2011); Weep Not For Them (<www.weepnotforthem.net>, viewed 2011, McDonald family history). ***Map:*** Appendix 3.

**DUNCAN, Elizabeth Jane** (later Mrs Morrell), 6 November 1865 – 19 May 1949, coll. WA. Born in WA, one of eight children, to pioneering settlers Thomas Duncan (c.1823–1878) and Isabella Jane née Pearson (c.1844–1940). Elizabeth collected MEL specimens in the vicinity of the family property at Greenough River, 1883. In 1888, she married a farmer, Reuben Edwin Morrell (c.1855–1919), at Greenough, and they had eight children. Elizabeth died in 1949 in Geraldton aged 84.

***MELISR:*** 24 specimens. Miss E. Duncan/ Miss Duncan. ***References:*** ABC ('Duncan, Elizabeth Jane'); WA-BDM (viewed 2011); *West Australian Times* (23 August 1878: 2, father's death); *Western Mail* (23 October 1919: 27, husband's death); *West Australian* (29 January 1940: 3, mother's death); *West Australian* (23 May 1949: 1, death). ***Portrait:*** Elizabeth Jane Morrell, 1930, BA1954, State Library of Western Australia (Appendix 1). ***Map:*** Appendix 3.

**EADES, Lucy** née Coyne, c.1859 – 12 November 1927, coll. WA. Born in WA, with one Aboriginal parent (she is described in the birth records of her children as a 'halfcaste'). In 1876, Lucy married ex-convict Charles Eades (c.1831–1898) in Albany, and they had six children. Lucy collected a MEL specimen (as 'Mrs Eades with Webb Jr') west of 'Kojonerup Stream' (i.e. Kojaneerup) near the Stirling Range, 1886. Webb Jr was Thomas Heaton Webb (1877–1903) son of William Webb and Lucy née Mew/s who also collected MEL specimens. M claimed that 'Webb's plants are always purchased and are rarely his own collections'. Lucy Eades died in Katanning in 1927, aged 68, of heart failure.

***MELISR:*** 1 specimen. Mrs Eades with Webb Jr. ***References:*** ABC ('Eades, [Lucy], Mrs'; 'Webb, William'); Tilbrook, L. (1983) *Nyungar tradition: glimpses of Aborigines in south-western Australia 1829–1914*. University of Western Australia Press: Perth, p. 162; Fremantle Prison (<www.fremantleprison.com.au>, viewed 2013); WA-BDM (viewed 2011); DWA; WA Death Certificate (No. 72 Lucy Eades, 1927, Katanning). ***Mueller Project letters:*** L86.02.15 to J. Agardh (Webb). ***Map:*** Appendix 3.

**EATON, Alice** (later Mrs Heal), 1 March 1870 – 19 April 1932, coll. WA. Born the second of seven children to settlers Alfred Thomas Vile Eaton (1844–1921) and Mary Ann née Farmer (1838–1921). The family lived at Youndegin, WA, where they kept an inn. Alice collected MEL specimens at the sources of the Swan River, 1888–1891, 1893; near York, 1888; at the sources of the Blackwood River, 1889; east of York, 1889; at Youndegin, 1889–1894; Northam, 1892; and Southern Cross, 1894. She collected types of *Helipterum fitzgibboni* F.Muell. (1890), *Hydrocotyle corynophora* F.Muell. (1890), *Trochymene eotonioe* F.Muell. (1892), named for her, *Hibbertia eotoniae* Diels & Pritzel (1904), *Eremophila woolisiono* var. *dentoto* Ewart & Jean White (1908), *Boeckia eotoniono* Ewart & Jean White (1909), named for her, and *Thysonotus bentionus* Ewart & Jean White (1909). Alice's mother, Mary Ann Eaton, and sister, Martha Eaton, also collected MEL specimens. In 1895, Alice married Arthur Heal (1849–1924), a farmer at 'Eastbourne', East Beverley. They had seven children. Alice collected MEL specimens (as 'Mrs Alice Heal') at Southern Cross, 1895 and Youndegin, 1897. There are also Alice Eaton specimens at NSW and PERTH. She died in 1932 at Beverley aged 62. Five letters from Alice to M survive.

***MELISR:*** 783 specimens. Miss Alice Eaton/ Miss A. Eaton/ Miss A. Eton/ Mrs Alice Heal. ***References:*** ABC ('Eaton, Alice'); Rica Erickson notes (Willis papers, WILL001100, series 4, Box 1, RBG Melbourne); WA-BDM (viewed 2011). ***Mueller publications:*** B92.08.02 (eponymy). ***Mueller Project letters:*** L90.04.17, L90.10.00, L92.06.29, L93.11.24, L94.10.14 from Eaton. ***Handwriting:*** RB MSS M66, RBG Melbourne (Appendix 2). ***Map:*** Appendix 3.

**EATON, Mary Ann** née Farmer, 22 October 1838 – 21 April 1921, coll. WA. Born in Perth, one of ten children, to Charles Thomas Farmer (1799–1845) and Margaret Ann née Spencer (1811–1848). Mary married John Thorpe (b.1856).

In 1868, she married a second time, to Alfred Thomas Vile Eaton (1844–1921), and they had seven children. The family lived at Youndegin, where they kept an inn. Mary Ann collected MEL specimens (as 'Mrs Eaton') at Swan River, 1888, and east of York, 1889. Two of her daughters, Alice and Martha Eaton, also collected MEL specimens. Mary Ann died in Northam in 1921 aged 82.

***MELISR:*** 2 specimens. Mrs Eaton. ***References:*** Rootsweb (<http://freepages.genealogy.rootsweb.ancestry.com/~mywamob/mywamob/5032.htm>, viewed 2014); MEL 0222226A; MEL 1009147A. ***Map:*** Appendix 3.

**EATON, Mary *Martha* Vile** (later Mrs Heal), 12 August 1868 – 1941, coll. WA. Born, the first of seven children, to settlers Alfred Thomas Vile Eaton (1844–1921) and Mary Ann née Farmer (1838–1921). They lived at Youndegin, WA, where they kept an inn. Martha collected MEL specimens at the Swan River, 1888; sources of the Swan River and upper Swan River 1888–1889; York, 1888; and Youndegin 1888–1889. In 1889, Martha married a farmer, James Heal, and they had four children. Martha collected MEL specimens (as 'Mrs Heal') at the sources of the Swan River, 1889, 1890–1891, 1893; York, 1889, 1892; Cumminin (i.e. Kumminin), 1890–1892, 1894–1895; and Southern Cross, 1894. She collected types of *Gompholobium eotonioe* F.Muell. (1889), *Anthotroche healiano* F.Muell. (1891), named for her, *Logonio choretroides* F.Muell. (1889), *Fronkenio conferto* Diels (1904), *Psommomoyo ephedroides* Diels & Loes (1904), and *Aizoon globro* Leuhm. ex Ewart (1908). Martha's mother, Mary Ann Eaton, and sister, Alice Eaton, also collected MEL specimens. There are also Martha Eaton specimens at BRI and PERTH. She died in WA in 1941 aged 73. One letter from Martha to M survives.

***MELISR:*** 441 specimens. Miss Martha Eaton/ Miss M. Eaton/ Miss Eaton/ Mrs Martha Heal/ Mrs M. Heal/ Mrs Heal/ Heal/ Mrs Eaton. ***References:*** ABC ('Eaton, Mary Martha Vile'); Rica Erickson notes (Willis papers, WILL001100, series 4, Box 1, RBG Melbourne); WA-BDM (viewed 2011). ***Mueller publicatians:*** B89.02.02, 891.02.01 (eponymy). ***Mueller Project letters:*** LB8.10.03 from Eaton. ***Handwriting:*** R8 MSS M1, R8G Melbourne (Appendix 2). ***Map:*** Appendix 3.

**EDWARDS, Annie Helen** (Miss), 1859–1950, coll. NSW. Born in Deniliquin, NSW, one of four children, to a grazier, Charles Edwards (c.1813–97), and Elizabeth née Shaw. The Edwards' managed, then leased, 'Runnymede Station', NSW. In 1893, they took up 'Bentley' and 'Roseberry' stations. Annie collected (numbered) MEL specimens (including fungi and mosses) at Richmond River, 1887–1895; 'Runnymede', 1888–1889, 1893; and Casino, 1894. She collected the type of *Clothrus intermedius* E.Fisch. (1893). Eduard Fischer identified Annie's fungal specimens for M. There are also Annie Edwards (as 'Miss Edwards') specimens at B (musci). Annie did not marry, and died in 1950 at Casino in her 91st year. Two letters from Annie to M survive.

***MELISR:*** 75 specimens. Miss Annie H. Edwards/ Miss A.H. Edwards/ Miss A. Edwards/ Miss Edwards/ Edwards. ***References:*** ABC ('Edwards, Annie H., Miss'); *Empire* (4 July 1871: 4, Runnymede); *Clarence & Richmond Examiner* (20 November 1897: 5, father's death); NSW Death Certificate (1897/011368 Charles Edwards); NSW-BDM (viewed 2011); Fischer, E. (1893). Neue Untersuchungen zur vergleichenden Entwicklungsgeschichte und Systematik der Phalloideen. *Neue Denkschr. Schweiz. Naturf. Ges.* **33**: 20. ***Mueller Project letters:*** L86.11.15, L94.10.24 from Edwards. ***Handwriting:*** RB MSS M1, RBG Melbourne (Appendix 2). ***Map:*** Appendix 3.

**ELLIOT, (Miss),** fl. 1895, coll. SA. Collected a MEL specimen at Port Elliot, 1895.

***MELISR:*** 1 specimen. Miss Elliot. ***References:*** A8C ('Elliot, Miss'). ***Map:*** Appendix 3.

**EMERY, E.** (Miss), fl. 1890, coll. Vic. Probably Emily Jane Emery (c.1870–1928). Born in Fitzroy, Vic., one of nine children to Henry Emery (c.1829–1881), and Sarah Ann Davis (c.1831–1915). The family settled in Belfast (i.e. Port Fairy) where Emily's father worked as a builder. Emily probably collected a MEL specimen (as 'Miss E. Emery') at Port Fairy, 1890. In 1903, Emily married Michael Young Atkinson (c.1862–1935), and they had at least two children. Emily died in 1928, in Koroit, aged 58.

***MELISR:*** 1 specimen. Miss E. Emery. ***References:*** A8C ('Emery, E., Miss'); Indexes to Victorian BDM records, State Library of Victoria; *Argus* (23 May 1903: 9, marriage); *Port Fairy Gazette* (29 November 1915: 2, mother's death). ***Map:*** Appendix 3.

**EVANS, Mary** née Jones, 1836 – 2 August 1897, coll. NSW. Born near Ludlow, Shropshire, England, to Edward Jones and Sarah née Maund. The Jones family migrated to Vic. c.1852. Mary married David Evans (1836–1899) in Wangaratta in 1862, and they had ten children while living in the district. The Evans family moved to NSW c.1888 and took up 'North Merrowie Station'. Mary collected MEL specimens (as 'Mrs Evans') at Hillston, 1888. Her daughter, Mary Cecil Evans, also collected MEL specimens. Mary died at Hillston in 1897 of sudden heart failure aged 61.

***MELISR:*** 3 specimens. Mrs Evans. ***References:*** A8C ('Evans, M.C., Miss/Mrs'); NSW Death Certificate (1897/008441 Mary Evans); Linley & Jim Hooper's Family History (<www.linleyfh.com>, viewed 2011). ***Map:*** Appendix 3.

**EVANS, Mary Cecil** (later Mrs Miller), 1863–1905, coll. NSW. Born in Wangaratta, Vic., one of ten children, to David Evans (1836–1899) and Mary née Jones (c.1836–1897). The Evans family moved to NSW c.1888 and took up 'North Merrowie Station'. Mary collected MEL specimens at the sources of the Lachlan River, and the Darling River, 1888, and Hillston, 1888–1889. Mary's mother, Mary Evans, also collected MEL specimens. In 1891, Mary married Dr William Francis Miller (1861–1938) of Maryborough, Vic. They had four children. Mary died in 1905 in Maryborough in her 42nd year.

***MELISR:*** 39 specimens. Miss M.C. Evans/ Miss Evans/ Evans. ***References:*** A8C ('Evans, M. C., Miss/Mrs'); *Argus* (28 January 1905: 9, death); *Argus* (18 April 1938: 2, husband's death); Linley & Jim Hooper's Family History (<www.linleyfh.com>, viewed 2011). ***Map:*** Appendix 3.

**FARRELLY, Mary Martha** née Maley, June 1866 – 26 August 1943, coll. WA. Born in WA, the third of fourteen children, to John Stephen Maley (1839–1910) and Elizabeth Kniest née Waldeck. The family were pioneering settlers at Greenough Flats. In 1889, Mary married Alfred William Gresswell Farrelly (d.1949), a solicitor in Geraldton. They did not have any children. In 1890, the Farrellys moved to Fremantle. Mary collected MEL specimens (as 'Miss Fanelly') at Greenough, and Yandanooka, 1894. Her father also collected specimens, and one (dated 1897) is at PERTH. Mary was an active member of organisations that promoted women's rights and health. In 1943 she died in a private hospital in Subiaco aged 77. One letter from Mary to M survives.

***MELISR:*** 2 specimens. Fanelly. ***References:*** A8C ('Farrelly, Mary Martha', 'Maley, John Stephen'); WA-BDM (viewed 2011); *West Australian* (18 February 1890: 3, move to Fremantle); *West Australian* (13 September 1917: 4, death of mother); *West Australian* (30 August 1943: 1 & 2, death); *West Australian* (31 August 1943: 4, 'Mrs Farrelly's Death'). ***Mueller Project letters:*** L94.08.25 from Farrelly. ***Portrait:*** *West Australian* (31 August 1943: 4). ***Handwriting:*** R8 MSS M1, R8G Melbourne (Appendix 2). ***Map:*** Appendix 3.

**FEREDAY, (Miss),** fl. 1865, coll. Tas. Probably Elizabeth Henty Fereday (later Mrs Brewer) (1849–1927). Born in Launceston, Tas., the youngest daughter of clergyman John Fereday (1813–1871) and Susan Georgina Marianne née Abthorp/Apthorpe (c.1810–1878). The Feredays lived in George Town, Tas., 1846–1875. Elizabeth probably collected MEL specimens (as 'Miss Fereday') (algae) at Tamar River, 1865. Elizabeth's mother, Susan Fereday, and her father also collected MEL specimens. In 1878, Elizabeth married a bank manager, Charles Thomas Brewer (1848–1941), and they had eight children. Elizabeth died in Sydney in 1927 aged 78.

***MELISR:*** 2 specimens. Miss Fereday. ***References:*** Tasmanian BDM records, State Library of Victoria; NSW-BDM (viewed 2013); Ancestry.com (<www.ancestry.com.au>, viewed 2013); *Argus* (29 June 1878: 1, marriage). ***Map:*** Appendix 3.

**FEREDAY, Susan Georgina Marianne** née Abthorp/Apthorpe, c.1810 – 21 October 1878, coll. Tas. Born in England, where she married Anglican clergyman John Fereday (1813–1871). They had at least five children. The Feredays lived in George Town, Tas., 1846–1875, then Susan retired with her unmarried children to Sale in Vic. Susan was a watercolour artist, and collected algae for William Harvey. She collected MEL specimens (algae) at George Town in 1864–1865, and also collected types of *Dasya feredayae* Harvey (1859) and *Nemastoma feredayae* Harvey (1859), which were named for her. There are also Susan Fereday specimens at BM. Her husband and a daughter (see Miss Fereday) also collected MEL specimens. Susan died in Sale, Vic., in 1878 aged 68.

***MELISR:*** 4 specimens. Mrs Fereday/ S.G.M.F. [NB These specimens probably came to Mueller via the Sonder herbarium (same via Samuel Hannaford's herbarium).] ***References:*** A8C ('Fereday, Susan Georgina Marianne'); Algaebase (<www.algaebase.org>, viewed 2013, eponymy). ***Map:*** Appendix 3.

**FERNIE, Elizabeth (Eliza)** (Miss), c.1832 – 1 June 1906, coll. Vic. Born in Scotland, one of at least four children, to Alexander Fernie (1794–1854) and Sarah née Hall (c.1803–1875). The family migrated to Vic. and settled at Malmsbury where they established the firm of 'Fernie Bros.' farmers and graziers. Eliza collected a MEL specimen at Malmsbury, n.d. In 1876, Eliza's sister Janet Jarvis Fernie died and Eliza inherited her estate. In the late 1870s, 'Fernie Bros.' aquired land at Richmond Plains near Wedderburn. Eliza suffered a serious horse and cart accident there in 1896. Her brother David Fernie died in 1905 and Eliza inherited his estate. She died the following year at Richmond Plains, aged 74, but was buried at the Malmsbury Cemetery.

***MELISR:*** 1 specimen. Miss E. Fernie. ***References:*** MEL 1544464A (label in M's handwriting); Malmsbury Cemetery headstones; Ancestry.com (<ancestry.com.au>, viewed 2014); *Argus* (28 August 1876: 8, Janet Fernie's estate); *Argus* (6 January 1905: 6, William Fernie's estate); *Argus* (17 July 1906: 5, death & estate). *Bendiga Advertiser* (13 May 1896: 3, accident); *Bendiga Advertiser* (18 November 1897: 4, death of David Fernie); Vic. Indexes to Victorian BDM records, State Library of Victoria. ***Map:*** Appendix 3.

**FIELD, Hannah** née Armitage, 1863 – 8 January 1945, coll. Qld. Born in Qld, one of at least three children, to Jeremiah Downs Armitage (d.1919) and Mary Ann née Mottershead. The family established a mango orchard on the property

'Eimeo' near Mackay. In 1894, Hannah married Edwin Richard Field (1865–1944), a mining engineer at Maytown. Edwin's father, Edwin Field sr, was a mining manager in Maytown. Hannah collected MEL specimens on the upper Palmer River, 1895. She and Edwin had one daughter in Qld, and then three more after returning with her husband and his parents to their home state of Victoria. Hannah died in 1945 at a daughter's home in Elsternwick aged 81.

***MELISR:*** 10 specimens. Mrs H. Field. ***References:*** ABC ('Field, A., Mrs; also H.'); Qld-BDM (viewed 2014); *Queenslonder* (19 August 1882: 1s, Eimeo property); *Brisbane Courier* (2 October 1894: 4, marriage); *North Queenslond Register* (10 November 1902: 29, death Edwin Field sr); *Argus* (29 December 1944: 5, death husband); *Argus* (9 January 1945: 2, death). ***Handwriting:*** MEL 0669788A (Appendix 2). ***Map:*** Appendix 3.

**FISHER, (Mrs R.E.)**, fl. 1890, NSW. Collected MEL specimens at Pleasant Hills, 1890.

***MELISR:*** 6 specimens. Mrs R.E. Fisher. ***References:*** ABC ('Fisher [Fischer?] H. C./ C. H.'). ***Map:*** Appendix 3.

**FOOT, Ada** née Portus, 1861 – 15 April 1901, coll. Qld. Born in NSW, the eldest daughter of John Oxley Portus (d.1901), a contractor, and Anne Elizabeth née Hannah. The family moved to Rockhampton, c.1864. In 1885, Ada married Edmund D'Olier Foot (1852–1930), of 'Springsure Station', and they had five children. Ada collected MEL specimens at 'Springsure Station' and Nogoa River, 1890; and Mount Salvator and 'Cungelella Station', 1891. Ada's husband, and sisters-in-law Harriette Sophie Biddulph and Ellen Caroline Biddulph, and nieces Alice Caroline Biddulph and Florence Frances Biddulph, also collected MEL specimens. Ellen died in 1901 in her 40th year.

***MELISR:*** 56 specimens. Mrs Ada Foot/ Mrs A. Foot/ A. Foot/ Mrs Foot/ Foot/ A. Foote. ***References:*** ABC ('Foote, Ada, Mrs', 'Foote, Edmund'); Qld-BDM (viewed 2011); *Morning Bulletin*, Rockhampton (6 March 1885: 1, marriage). *Morning Bulletin* (16 April 1901: 1, death). ***Hondwriting:*** MEL 2075203A (Appendix 2). ***Map:*** Appendix 3.

**FORDE, (Miss)**, fl. n.d., coll. Vic. Collected MEL specimens at Cape Otway, n.d.

***MELISR:*** 2 specimens. Miss Forde. [NB label is in M's handwriting.] ***Mop:*** Appendix 3.

**FORDE, (Mrs)** see **Scott, Helena**

**FORREST, Margaret Elvire** née Hamersley, 22 October 1844 – 13 June 1929, coll. WA. Born in Le Havre, France, to Edward Hamersley (1810–1874) and Anne Louise née Cornelis. The family migrated to WA in 1850 where they became prominent pastoralists. Margaret grew up an accomplished watercolour artist. In 1876, she married John Forrest (1847–1918), a surveyor, explorer and politician. They did not have any children. M stayed with the Forrests on a visit to WA in 1877. Margaret collected MEL specimens (including fungi) near Perth, 1878–1879; Darling Range, 1880; Gascoyne River, 1882 (with husband); Gingin, 1883; Swan River, c.1883; Champion Bay, 1889; near Dongarra, 1889; near Gascoigne River, 1892; and about 80 miles eastward of the Irwin River, 1893. *Helipterum margarethae* F.Muell. (1878) and *Agaricus forrestiae* Kalch. (1883) were named for her. Margaret collected types of *Agaricus forrestiae* Kalchbr. (1883), *Tricholoma carneoflavidus* Kalchbr. (1883), *Agaricus turbinipes* Kalchbr. (1883), *A. plagiotus* Kalchbr. (1883), *A. bicinctus* Kalchbr. (1883) and *Velleia salmoniana* F.Muell. (1892). Károly Kalchbrenner identified Margaret's fungal specimens for M. Margaret's brother-in-law Alexander Forrest and future sister-in-law, Amy Eliza Barrett-Lennard, also collected MEL specimens. Margaret died in Greenough in 1929 at the age of 85. M gave Margaret an inscribed copy of W.A. Mozart (n.d.) *Die Zäuberflote*, B. Tours (ed.), N. Macfarren (trans.), London.

***MELISR:*** 249 specimens. Lady Margaret Elvire Forrest/ Margaret Elvire Forrest/ Mrs M.E. Forrest/ Mrs Forrest/ Mrs Forest. ***References:*** ABC ('Forrest, Margaret Elvire'); Crowley, F. (2000). *Big John Forrest 1847–1918*. UWA Press: Nedlands. ' (photo); Wikipedia (<en.wikipedia.org>, 'Edward Hamersley senior', viewed 2012); *West Australian* (6 October 1877: 2, M's visit); Kalchbrenner, C. (1883). New species of Agaricus discovered in West Australia. *Proc. Linn. Soc. NSW* **7**, 638–640. ***Mueller publicatians:*** B78.11.04 (eponymy). ***Mueller Project letters:*** L82.12.00 to Forrest (inscription). ***Portrait:*** Lady Margaret Forrest, 1890, online image 090786PD, State Library of Western Australia (Appendix 1). ***Map:*** Appendix 3.

**FRANKLYN, Louisa Bessy** (later Mrs Clarke), 1861 – 27 June 1937, coll. WA. Louisa was born in New Zealand to Henry and Louisa Sarah Franklyn. Louisa collected MEL specimens (as 'Miss Franklyn') at Albany and 'Mungden', 1884. In 1886, she married Henry Thoburn Clarke (c.1845–1901), a journalist, and they had three children. Louisa collected MEL specimens (as 'Mrs Clarke') at King George Sound, 1889. M sent Louisa a copy of his *Select extra-tropical plants* (1885). Louisa died at Godmersham, Kent, England, in 1937 aged 76.

***MELISR:*** 144 specimens. Miss L.B. Franklyn/ Miss Franklyn/ Miss L. Franklin/ Miss Franklin/ Miss Franklyne/ Mrs Clarke. ***References:*** ABC ('Franklyn, Louisa Bessey [Bessy]'); NZ Births, Deaths & Marriages Online (<www.bdmhistoricalrecords.dia.govt.nz>, viewed 2013); England & Wales, National Probate Calendar (<www.ancestry.com.

au>, viewed 2013); DWA; *Kalgoolie Western Argus* (16 April 1901: 12, husband's death). ***Map:*** Appendix 3.

**FRIEDERICH, (Mrs A.)**, fl. 1887, coll. NSW. Collected MEL specimens at Garangula and the upper Lachlan River, 1887; and upper Murrumbidgee River and Murrumburrah, 1887–1888. 'Madame Friederich' was a contributer to the Australian Museum, 1888, and a member of the Natural History Association, Sydney, 1889. She also wrote natural history articles as 'Madame A. Friederich, of Melbourne University'.

***MELISR:*** 46 specimens. Mrs Freiderich/ Mrs Freidrich/ A. Friederich/ Mrs Friederich/ A. Friedrich/ Mrs Friedrich/ Mrs Friedrichs. ***References:*** ABC ('Friedrich, A. [Mrs] [Friedrichs/ Freidrich/ Friederich]'); *Sydney Morning Herold* (10 March 1888: 15, contribution); *Sydney Morning Herold* (16 April 1889: 5, membership); *Sydney Moil* (2 June 1888: 12, article on microbes by 'Madame A. Friederich, of Melbourne University'). ***Map:*** Appendix 3.

**GALE, Mary Ann** née Scott, 1833 – 26 April 1903, coll. WA. Born, one of at least seven children, to Capt. Daniel Scott (c.1800–1865), Harbour Master at Fremantle, WA, and Frances née Davis (c.1806–1865). In 1854, Mary married William Gale (c.1828–1865), Collector of Customs at Fremantle, and they had six sons. The family moved to Geraldton around 1858 to establish a general store, Messrs Scott & Gale. Mary remained in Geraldton after the sudden deaths, in 1865, of her husband, two sons, father, mother and brother. She collected (numbered) MEL specimens (algae), at Champion Bay, 1880–1881, and upper Murchison River, 1881–1882. Her son Charles Frederick Gale also collected MEL specimens. In 1903, Mary died in Cottesloe at the age of 70.

***MELISR:*** 64 specimens. Mrs Gale/ Miss Gale. [N8 'Miss Gale' could not be a granddaughter of Mary Ann Gale because none of Mary Ann's sons married until after 'Miss Gale' collected MEL specimens.] ***References:*** A8C ('Mrs Gale', 'Gale, C.?'); WA-BDM (viewed 2011); *Perth Gozette* (27 January 1854: 2, marriage); *Perth Gozette* (3 March 1865: 2, father's death); *Perth Gozette* (2 June 1865: 2, son & husband's deaths); *Perth Gozette* (9 June 1865: 2, son's death); *Perth Gozette* (19 September 1865: 2, brother's death); *Perth Gozette* (1 December 1865: 2, mother's death); *Western Moil* (2 May 1903: 15 'Mrs Gale'). ***Mueller Project letters:*** L89.06.00 M to Dr Elliott. ***Map:*** Appendix 3.

**GERRARD, S.** (Miss), fl. 1887, coll. Tas, Vic. Collected MEL specimens at Ulverstone, 1887, Tas. and Fernshaw, 1887, Vic.

***MELISR:*** 5 specimens. Miss S. Gerrard. ***References:*** ABC ('Gerrard, S., Miss? [Gerard]'). ***Map:*** Appendix 3.

**GOODWIN, (Miss)**, fl. 1869–1870, coll. Tas. Probably Sophia Sybella Goodwin (1836 – 17 April 1894). Born in Launceston, Tas., one of at least three children, to William Lushington Goodwin (1798–1862), a journalist, and Sophia Elizabeth née Lay (d.1879). Sophia's parents migrated to Tas. in 1831, and settled at 'The Grove', George Town. After the death of her father in 1862, Sophia and her mother took in young ladies, with Sophia in charge of their education, and her mother in charge of their domestic needs. Sophia probably collected MEL specimens (as 'Miss Goodwin') at George Town and the mouth of the Tamar River, n.d. She collected the type of *Rhodophyllis goodwiniae* J.Agardh (1876), named for her. Jacob Agardh identified Sophia's algal specimens for M. Sophia's friends Susan Fereday and Miss Fereday also collected MEL specimens. In c.1874, Sophia moved to Sydney, NSW, where she worked as a music teacher. She did not marry, and died aged 58 in Paddington in 1894 of a uterine tumour.

***MELISR:*** 12 specimens. Miss Goodwin. ***References:*** ABC ('Goodwin, Miss'); Index to Tasmanian BDM records, State Library of Victoria; NSW-BDM (viewed 2013); AD8 ('William Lushington Goodwin'); *Cornwall Chronicle*, Launceston (15 December 1866: 7, board & education); *Cornwall Chronicle* (28 August 1867: 5, association with Feredays); *Cornwall Chronicle* (15 July 1868: 8, donation of algae to M); *Mercury*, Hobart (9 September 1879: 2, mother's death); NSW Death Certificate (1894/010289 Sophie Sybella Goodwin). ***Mueller publicatians:*** 869.07.03. ***Mueller Project letters:*** L72.00.00 from Agardh. ***Mop:*** Appendix 3.

**GORDON, Sarah Alice** (later Mrs Clark-Kennedy), 1863–1931, coll. Qld. Born, in Deniliquin, NSW, one of three children, to Thomas Gordon and Maria née Giffen. The family moved to Qld. Sarah became a school teacher in Cardwell, and collected MEL specimens at Cardwell, 1880, and Rockingham Bay, n.d. In 1882, Sarah married the Rev. William Frederick Clark-Kennedy (1856–1937), and they had six children. She died in Qld in 1931 in her 68th year. One letter from Sarah to M survives.

***MELISR:*** 2 specimens. S. Alice Gordon/ Miss Gordon. ***References:*** A8C ('Gordon, S.A.'); Mundia (<www.mundia.com/au/Person/13062903/863980107>, viewed 2013). ***Mueller Project letters:*** L80.11.03 from Gordon. ***Hondwriting:*** RB M55 M1, R8G Melbourne (Appendix 2). ***Map:*** Appendix 3.

**GRIBBLE, Mary Ann Elizabeth** née Bulmer, 29 March 1848 – 19 September 1929, coll. WA, Qld. Born in Kingston, Yorkshire, England, to Richard Bulmer (1825–1857) and Ellizabeth née Sharp (1819–1869). The family migrated to Vic. in the early 1850s. In 1868, Mary married a missionary, Benjamin *John Brown* Gribble (1847–1893), and they had thirteen children.

Mary and her husband established the Warangesdah Aboriginal Mission at Darlington Point, NSW, in 1880. They opened a mission on the Gascoyne River, WA, in 1885, a mission on the Darling River, NSW, in 1887, and Yarrabah mission near Cairns, Qld, in 1892. Mary collected MEL specimens (including fungi) in WA at the Gascoyne, 1886, 1889; and Swan River, 1887; and in Qld at Bellenden Ker, 1893–1895; Cairns, 1894; and Behang [?Behana] Creek and Walshs Pyramid, 1896. She collected the type of *Tulostoma maxima* Cooke & Mass. (1887). Mordecai Cooke and George Massee identified Mary's fungal specimens for M. Mary's son, the Rev. Ernest Richard Bulmer Gribble (1868–1957), also collected MEL specimens. Mary died in Randwick, Sydney in 1929 aged 80.

***MELISR:*** 333 specimens. Mrs M. Gribble/ Mrs Gribble/ Gribble. ***References:*** ABC ('Gribble, Mary Ann Elizabeth, Mrs'); ADB ('John Brown Gribble', viewed 2011); NSW-BDM (viewed 2011); 'Gribble family tree'(<ancestry.com.au>, viewed 2014); Cooke (1887: 94–95); *Sydney Morning Herold* (21 September 1928: 18, obituary). ***Map:*** Appendix 3.

**GROOM, Matilda Emma** née Minnitt, 31 October 1818 – 5 February 1894, coll. Tas. Born in Dublin, Ireland, one of at least four children, to Paul and Deborah Minnitt. The family migrated to Tas. and acquired a large property near 'Gaters' on the Liffey River. In 1839, Matilda married a settler Francis Groom (1817–1890), and they had eleven children. The Grooms settled at 'Harefield', a property near St Mary's, owned by Matilda's father-in-law. Matilda collected MEL specimens at 'Harefield', 1873. She died in Burnie in 1894 aged 76.

***MELISR:*** 78 specimens. Mrs Groome/ Mrs Groom. ***References:*** ABC ('Groom[e], Mrs. F.G.'); Groom, F.G. (1985). *The Grooms of Horefield*, published by the author, Rosny, Tas.; *Courier* (14 February 1852: 3, RSVD); *Launceston Examiner* (7 February 1894: 5, death). ***Map:*** Appendix 3.

**GROVER, Eleanor (Ellen) Sarah** (later Mrs Glen), 18 May 1865 – 1932, coll. WA. Born in WA, the third of eleven children, to settlers William Grover (c.1837–1920) and Mary née Noonan (1842–1926). The family were pioneers in the Kojonup district at 'Indinup' sheep station. Ellen collected MEL specimens at Katanning, north of King George Sound, 1889. In 1902, she married George Augustus Glen (c.1861–1947), a stock inspector. They had three children. Ellen's cousin Mary Cronin also collected MEL specimens. Ellen died in Perth in 1932 aged 67.

***MELISR:*** 57 specimens. Miss E. Grover/ Miss Grover. ***References:*** ABC ('Grover, Eleanor Sarah'); WA-BDM (viewed 2011); *Western Mail* (26 August 1926: 34, 'The late Mrs. B.M. Grover'); *West Australian* (5 February 1947: 1, husband's death). ***Map:*** Appendix 3.

**GUERIN, JANE** (Miss), 1846–1890, coll. WA. Born in WA, the youngest of three children, to a soldier, Roger Guerin (c.1806–1878), and his wife, Ellen (c.1810–1878). The Guerins migrated to WA c.1833, and were stationed at Augusta before taking up land at 'Pigeongrove', Vasse. Jane collected MEL specimens at Busselton, Vasse River, 1860; in the Geraldton, upper Irwin and Murchison districts, 1871; and Geographe Bay, 1874. She collected types of *Myriocephalus guerinae* F.Muell. (1874), named for her, and *Helipterum kendallii* F.Muell. (1874). Jane stayed with her brother, Fred Guerin, at Champion Bay after her parents died, and later went to SA. In 1890, Jane died in Adelaide, unmarried, at the age of 44.

***MELISR:*** 235 specimens. Miss J. Guerin/ Miss Guerin. ***References:*** ABC ('Guerin, Jane'); Rica Erickson notes (Willis papers, WILL001100, series 4, Box 1, RBG Melbourne); WA-BDM (viewed 2011); *West Australian* (29 December 1890: 2, death). ***Mueller publications:*** B74.04.01 (eponymy). ***Portrait:*** Jane Guerin, 1873, S134B, State Library of Western Australia (Appendix 1). ***Handwriting:*** MEL 0016797A (Appendix 2). ***Map:*** Appendix 3.

**HAIG, Louisa Jane** née Baker, c.1838–1919, coll. NSW. Born in England, the youngest daughter of a solicitor, Thomas Baker. In 1860, Louisa married a physician in Melbourne, William Haig (1823–1893). They had seven children. Louisa collected MEL specimens at the Blue Mountains, 1888. Her husband, and son, John Sibly Haig (1873–1949), also collected MEL specimens. Louisa died in Kew in 1919 aged 81.

***MELISR:*** 11 specimens. Mrs W. Haig/ Mrs Dr Haig. ***References:*** ABC ('Haig J. [S.]', 'Haig, William R.'); Indexes to Victorian BDM records, State Library of Victoria; *Argus* (15 February 1860: 4, marriage). ***Mueller Project letters:*** L77.09.22 to W. Haig. ***Map:*** Appendix 3.

**HALL, (Mrs)**, fl. 1890–1891, coll. NSW. Collected MEL specimens at New England, 1890–1891.

***MELISR:*** 4 specimens. Mrs Hall. ***References:*** ABC ('Hall, Mrs'). ***Map:*** Appendix 3.

**HAMILTON, Annie *Rose* Scott** (later Mrs Cowen), 24 April 1879 –July 1971, coll. Qld. Born at 'Tambo Station', Qld, one of seven children, to a grazier, Terrick Alfred Hamilton (1851–1925), and Alice née Scott (1851–1929). M recruited Rose as a collector via a letter to her grandmother, Sarah Ann Scott née Rusden (c.1810–1896) who passed the request for specimens on to Rose's mother, Alice. Rose collected specimens at 'Tambo Station'. Rose's first cousins

(once removed) Harriet and Helena Scott also collected MEL specimens. In 1900, Rose married a grazier, William Leonard Cowen (c.1866–1935), and they had two sons. The Cowens lived on 'Longford Station', 1907–1919. Rose died in 1971 in her 92nd year.

***MELISR:*** no specimens. ***References:*** Cowen, R.S. (1961). *Crossing dry creeks: 1879 to 1919*. The Wentworth Press: Sydney; Qld-BDM (viewed 2013); NSW-BDM (viewed 2013); *Morning Bulletin*, Rockhampton (31 August 1935: 6, obituary husband). ***Portrait:*** Cowen (1961).

**HARPER, (Miss)**, fl. 1896, coll. WA. Possibly Clara Julia Harper (1881–1969). Born in WA, the eldest daughter of Charles Harper (1842–1912), explorer, settler, nurseryman (who also collected MEL specimens), and Fanny née de Burgh. The Harpers settled at Guildford. Clara possibly collected MEL specimens (as 'Miss Harper') near Swan River, 1896. In 1913, Clara married Anthony Robertson. She died in 1969 in Perth aged 88.

***MELISR:*** 16 specimens. Miss Harper. ***References:*** A8C ('Harper, Miss' & 'Harper, Charles'); WA-BDM (viewed 2012). ***Map:*** Appendix 3.

**HARRIS, (Mrs)** see **Wells, Julia Susanna**

**HEAL, (Mrs) Alice** see **Eaton, Alice**

**HEAL, (Mrs)** ***Martha*** see **Eaton, Mary** ***Martha*** **Vile**

**HEDLEY, (Miss)**, fl. 1891, coll. Vic. Collected MEL specimens at the Ovens River, 1891.

***MELISR:*** 3 specimens. Miss Hedley. ***References:*** A8C ('Hedley, A.'). ***Map:*** Appendix 3.

**HELMICH, Martha** née **Crisp**, c.1822 – 4 November 1904, coll. WA. Born in England, to John Crisp and his wife Martha (c.1792–1870). Martha's mother was a publican in Perth from c.1836. In 1844, Martha married Franz Anthon Didrich Christian Helmich (1824–1900), Post Master General of WA. They did not have any children. Martha collected MEL specimens 9 miles from mouth of Swan River, 1882, and at the Swan River, n.d. Her husband also collected MEL specimens. Martha died in 1904 in Perth aged 82.

***MELISR:*** 2 specimens. Mrs Helmich. ***References:*** ABC ('Helmich, Anton'); WA-BDM (viewed 2012); *Perth Gazette & WA Times* (7 June 1870: 2, mother's death); *West Australian* (11 July 1900: 6, husband's death); *West Australian* (7 November 1904: 4, death). ***Map:*** Appendix 3.

**HENDERSON, Euphemia Ethel Elizabeth Spencer Middleton** (Miss), 1822 – 30 November 1907, coll. Vic. Born in Valparaiso, Chile, one of at least five children, to James Henderson, a Captain in the Royal Navy, and Catherine née Black. Euphemia spent her early years on a family estate on Guernsey, and later on the Isle of Man. She came to Vic. when her sister Georgiana married a settler, John David McHaffie of Phillip Island. When not working as a governess, Euphemia lived with the McHaffies. She was also a wildflower artist in watercolours. In 1863, Euphemia was engaged to M for six months. They collected MEL specimens at Phillip Island, 1863. *Nematolepis euphemiae* F.Muell. (1863) was named for her. Euphemia died of gastroenteritis in Kew in 1907 aged 86. Forty-four letters from M to Euphemia survive.

***MELISR:*** no specimens. ***References:*** ABC ('Henderson, Euphemia etc.'); Maroske, S. (1997). The Private Life of a Public Figure. *Historical Records of Australian Science* **11(3)**, 335–343; Olsen, P. (2013). *Collecting ladies: Ferdinand von Mueller and women botanical artists*. National Library of Australia: Canberra; Vic. Death Certificate (12750 Euphemia Elizabeth Spencer Middleton Henderson); Biographical files RBG Melbourne (notes by Oonah F. McHaffie, 1968). ***Mueller publications:*** B63.04.01 (eponymy). ***Mueller Project letters:*** L62.11.01, L63.00.00, L63.02.08 (specimens), L63.02.22, L63.03.01, L63.03.22, L63.03.29, L63.04.01, L63.04.10, L63.05.02, L63.05.04, L63.05.06, L63.05.19, L63.06.04, L63.06.15, L63.06.29, L63.08.04, L63.08.18, L63.08.21, L63.08.22, L63.08.28, L63.09.10, L63.09.19; L63.10.14; L63.10.22; L63.11.05; L63.11.09, L63.11.14, L63.11.19, L63.12.05, L64.01.25, L64.01.27, L64.03.31, L64.05.16, L64.06.30, L64.09.12, L64.11.05, L65.06.30, L65.02.28, L66.06.30, L66.05.17, L66.09.23, L67.07.08, L69.07.06 from M. ***Portrait:*** Willis (1949. facing p. 85) (Appendix 1).

**HENLEY, Maria** (Miss), 1865–1957, coll. Vic. Born in Oxley, Vic., one of thirteen children, to a farmer, James Henley (d.1921), and Sophie Emma née Kettle (c.1839–1931). The Henley family established tobacco and hop plantations near Milawa and lived at 'Richmond House'. Maria collected MEL specimens (including fungi) at Wangaratta, 1891, Ovens River (incl. fungi), 1891–1893, 1895, and Milawa, 1894. She collected types of *Cordyceps henleyae* Massee (1894), named for her, and *Swainsona recta* A.T.Lee (1948). George Massee identified Maria's fungal specimens for M. Maria did not marry, and died in St Kilda in 1957 in her 92nd year. Twenty-six letters from M to Maria survive.

***MELISR:*** 52 specimens. Miss Maria Henley/ Miss Mary Henley/ Miss M. Henley/ Miss Henley. ***References:*** ABC ('Henley, M., Miss'); Indexes to Victorian BDM records, State Library of Victoria; *Argus* (20 July 1921: 1, father's death); *Argus* (10 October 1931: 15, mother's death). ***Mueller Project letters:*** L91.07.29, L91.08.18, L91.09.23, L91.11.13, L91.11.20, L91.12.05, L91.12.08, L91.12.25, L92.07.29, L92.10.14, L92.10.19, L92.12.07, L93.05.29, L93.10.30, L93.12.08, L94.10.17, L94.10.22, L95.05.31, L95.08.07, L95.10.00, L95.10.15, L95.11.20, L96.01.09, L96.01.15, L96.03.17, L96.04.02 to Henley. ***Map:*** Appendix 3.

**HESTER, Frances Theodosia** (later Mrs Heppingstone), 1850 – 30 June 1913, coll. WA. Born in Bunbury, WA, one of fourteen children, to Edward Godfrey Hester (c.1819–1897) of 'Blackwood Park', near Bridgetown, and Theodosia Sophia née Hall (c.1826–1897). Frances collected MEL specimens at Blackwood River, 1871–1876. She collected the type of *Lepidosperma leptostochyum* Benth. (1878). In 1877, she married Arthur Heppingstone (c.1843–1913) of 'Cundenup', and they had five children. Frances died in 1913 at Donnybrook in her 63rd year.

***MELISR:*** 176 specimens. Miss Hester. [NB Edward and Theodosia Hester had six other daughters who were unmarried for at least part of 1871–1880s and may have collected MEL specimens as 'Miss Hester': Amy Sophia Hester (1851–1933, later Mrs George Grey Egerton-Warburton), Fanny Augusta Hester (b.1853, later Mrs Augustus Egerton-Warburton), Louisa Katherine Hester (b.1856, later Mrs Henry Stuart Carey), Flora Hastings Hester (b.1859, later Mrs Frederick Charles Stephenson), Eveline Edith Hester (b.1861, later Mrs Randle Egerton-Warburton), and Jessica Dora Hester (b.1867, later Mrs James Inglis).] ***References:*** ABC ('Hester, Miss'); Rica Erickson notes (Willis papers, WILL001100, series 4, Box 1, R8G Melbourne); Bridgetown History (<bridgetownwahistory.com/rbp.html>, viewed 2013); WA-BDM (viewed 2011); *West Australian* (11 November 1897: 4, mother's death); *West Australian* (15 November 1897: 4, father's death); *Sunday Times* (16 March 1913: 7S, husband's death); *Western Mail* (16 May 1913: 34); *Western Mail* (11 July 1913: 34, death); *Western Mail* (10 August 1939: 13, 'Blackwood Park'). ***Mueller Project letters:*** L00.00.00 from Hester. ***Portrait:*** *Western Mail* (1913) 16 May: 34. ***Handwriting:*** RB M5S M1, R8G Melbourne (Appendix 2). ***Map:*** Appendix 3.

**HODGKINSON, Mary** née Marshall, c.1824 – 22 January 1889, coll. NSW. Born in England, one of four children, to Thomas Mulcaster Marshall (1790–1866), and Sarah née Foster (1792–1872). The family migrated to Melbourne, Vic., in 1840, where Mary's father became a land commission agent. In 1843, Mary married James Hodgkinson (1811–1892), of 'Woodstock Station', and they had nine children. In 1865, Mary's husband declared himself insolvent due to the cost of litigation with a business partner. The family moved to NSW in 1866 where they became the first settlers at 'Lennox Head' at the mouth of the Richmond River. Mary collected MEL specimens (including fungi) at Richmond River, 1870, 1872, 1874–1875, 1877–1879, 1884–1885, 1887–1888. She collected types of *Eugenia smithii* var. *hemilompro* F.Muell. (1875) as 'Marcia Hodgkinson', *Eugenio hodgkinsoniae* F.Muell. (1875) named for her as 'Maria Hodgkinson', *Morosmius equi-crinus* F.Muell. (1880) as 'Maria Hodgkinson', *Agoricus erodicotus* Kalchbr. (1880), *Agoricus pumilio* Kalchbr. (1880), *Agaricus loeticolor* Kalchbr. (1880), *Agaricus luteoourantius* Kalchbr. (1880), *Agaricus imberbis* Kalchbr. (1880), *Agaricus obbreviotus* Kalchbr. (1880), *Xerotus popuasius* Kalchbr. (1880), *Anthurus muellerionus* Kalchbr. (1880), *Sticta querzicons* var. *microphyllo* Kremp. (1880) as 'Hodgkinson', *Acocio moidenii* F.Müll. (1892) as 'Mrs Hodgkinson', *Thelotremo australiense* Muell.Arg. (1887) as 'Mrs Hodgkinson'. She probably collected types of *Agoricus gomphodes* Kalchbr. (1880), *Agoricus nosutus* Kalchbr. (1880), *Coprinus murinus* Kalchbr. (1880), *Morosmius minutissimus* F.Muell. (1880), *Morosmius pilopus* Kalchbr. (1880), *Morosmius crinisequi* F.Muell. (1880) *Lentinus fuscopurpureus* Kalchbr. (1880), *Lentinus hyracinus* Kalchbr. (1880) and *Lenzites torrido* Kalchbr. (1880). Károly Kalchbrenner identified Mary's fungal specimens for M. Mary's daughter Nina Hodgkinson also collected MEL specimens. M gave Mary a copy of his *Select extro-tropicol plonts* (1885). In 1889, Mary died in in her home aged 66.

***MELISR:*** 540 specimens. Mrs M. Hodgkinson/ Mrs Hodgkinson/ Mrs Hodgk./ M. Hodgkinson/ Hodgkinson/ Mrs & Miss Nina Hodgkinson/ Mrs & Miss Nina Hodgkins. ***References:*** ABC ('Hodgkinson, J.' and 'Hodgkinson, May [Maria/Mary]'); Hull (1996); Index Fungorum (<www.indexfungorum.org>); (<users.vic.chariot.net.au/~godfrey/marshall.htm>, viewed 2011); *Clorence and Richmond Examiner & New England Advertiser* (19 December 1865: 3, husband's insolvency); *Sydney Morning Herald* (8 February 1889: 1, death); *Argus* (3 May 1892: 1, husband's death); Kalchbrenner, C. (1880). Fungi of Australia. *Grevillea* **8**, 151–154; Kalchbrenner, C. (1880). Phalloidei novi vel minus cogniti. Értek. Term. Körèb. Magyar Tud. Akad. **10**, 22–23. ***Mueller publicatians:*** 875.09.02, B92.13.05, B80.02.02 (eponymy). ***Mueller Project letters:*** L75.04.15 to Berkeley; L81.01.12 to Müller; L86.03.04 to Deakin (book); L89.03.22 to Agardh. ***Map:*** Appendix 3.

**HODGKINSON, Virginia *Nina*** (later Mrs Seymour), 1850 – 13 October 1888, coll. NSW. Born in Woodstock, Lexton, Vic., one of five daughters, to a pastoralist, James Hodgkinson (1811–1892), and Mary née Marshall (1824–1889). The Hodgkinsons moved to 'Lennox Head' at the mouth of the Richmond River NSW in 1866. Nina collected MEL specimens (including algae) at Richmond River, 1874. She collected types of *Kallymenio nitophylloides* J.Agardh (1885), *Coulerpo hodgkinsoniae* J.Agardh (1887) as 'Miss Hodkinson', named for her, and *Coulerpo onnuloto* Lucas (1931). Jacob Agardh identified Nina's algal specimens for M. Nina's mother, Mary Hodgkinson, also collected MEL specimens. In 1884 at Ballina, Nina married William Perry Seymour (c.1840–1938), a settler and former soldier and sailor. They had one child. Nina died of convulsions in 1888 at Newrybar in her 38th year.

***MELISR:*** 28 specimens. Mrs & Miss Nina Hodgkinson/ Miss Hodgkinson/ Miss Hodkinson/ Mrs & Miss Nina Hodgkins.

***References:*** Hull (1996); NSW-8DM (viewed 2014); *Argus* (17 October 1888: 1, death); *Northern Star* (6 July 1938: 4, husband's obituary); Encyclopedia of Life (<www.eol.org>, viewed 2011). ***Map:*** Appendix 3.

**HOLDING, Charlotte Elizabeth** née Rowand, c.1828–1916, coll. NSW. Born in England, the youngest of eight children, to Dr Charles Rowand (1788–1874), and Maria née Griffin. In 1849, after her mother's death, the family migrated to Vic. and Charlotte's father practised as a surgeon in Geelong. In 1854, Charlotte married a settler, William James Campbell Holding (c.1823–1910), and they had thirteen children. The family lived at 'Mittai Endai', Wentworth, NSW. Charlotte's husband was a businessman, but also established an experimental garden of six acres. Charlotte collected MEL specimens at the junction of the Murray and Darling Rivers, 1880, 1887–1892; Lower Darling River 1884, 1887, 1889; Darling River, 1886–1887; Murray River 1887–1888; Upper Darling River 1887; and Wentworth 1887–1888, 1890. She collected the type of *Goodenia pusilliflora* F.Muell. (1888). Her daughter Lucy Holding also collected MEL specimens. Charlotte died in Wentworth in 1916 aged 88. Two letters from Charlotte to M survive.

***MELISR:*** 360 specimens. Mrs W.J. Holding/ Mrs J. Holding/ Mrs Holding. ***References:*** ABC ('Holding, Charlotte E., Mrs'); NSW-8DM (viewed 2011); Indexes to Victorian BDM records, State Library of Victoria; Australian Medical Pioneers Index (<www.medicalpioneers.com>, viewed 2011); *Argus* (4 May 1910: 8, husband's death); *Argus* (18 December 1916: 1, death). ***Mueller Project letters:*** L89.07.00, L91.04.11 from Holding. ***Handwriting:*** R8G RB MSS M1, Melbourne (Appendix 2). ***Map:*** Appendix 3.

**HOLDING, Lucy Edith** (later Mrs Whitfield), 1873 – 23 March 1919, coll. NSW. Born in Wentworth, NSW, one of thirteen children, to settlers William James Campbell Holding (c.1823–1910) and Charlotte Elizabeth née Rowand (c.1828–1916). The family lived at 'Mittai Endai', Wentworth, NSW. Lucy collected MEL specimens at the junction of the Darling and Murray Rivers, 1889–1890, 1895. In 1916, Lucy married Harry Anderson Whitfield (d.1928) in Wentworth. They had no children. Lucy died in 1919 in Wentworth aged 45 of a cerebral haemorrhage and heart failure.

***MELISR:*** 27 specimens. Miss L. Holding/ Miss Holding/ L.E.H./ Mrs L.E. Holding. ***References:*** NSW-BDM (viewed 2011); *Argus* (5 April 1919: 13, death); NSW Death Certificate (1919/003498 Lucy Edith Whitfield). ***Mueller Project letters:*** L89.07.00, L91.04.11 from Holding. ***Handwriting:*** MEL 2215806A (Appendix 2). ***Map:*** Appendix 3.

**HOOD, Jessie Ann** (Miss), c.1845 – 26 October 1915, coll. Qld, NSW. Born in Scotland, one of several children, to Robert Hood (c.1821–1891) and Mary Alice née Weatherley. The family migrated to Victoria in 1853 and settled at Merrang. In 1880, Jessie's brother, William Walter Hood (1844–1920), was appointed general manager of the Western Queensland Pastoral Company, whose stations included 'Burenda', 'Authoringa', and 'Mitchell Downs'. William was also a member of the Qld Acclimatisation Society. Jessie seems to have moved with her brother's family to Qld, and bought land in her own right near Mitchell in 1883. She collected MEL specimens at 'Burenda Station', 1884. Jessie did not marry, and died at her brother's home, 'Huntingtower', Brisbane, in 1915 aged 70.

***MELISR:*** 42 specimens. Miss J.A. Hood/ Miss J. Hood/ Miss Hood. ***References:*** ABC ('Hood, A. J., [J. A.?] Miss'); *Western Star & Roma Advertiser* (13 October 1883: 2, land purchase); *Camperdown Chronicle* (31 October 1891: 2, father's death); *Queenslander* (6 November 1915: 9, death); *Queenslander* (28 August 1920: 16, obituary brother). ***Map:*** Appendix 3.

**HUSSEY, Jessie Louise** (Miss), 5 June 1862 – 16 March 1899, coll. SA. Born at Port Elliot, SA, one of nine children, to settlers Henry Allen Hussey (c.1833–1899) and Harriet Ada née Webb (c.1837–1914). The family lived at Goolwa in the early 1850s where Jessie's father opened the first store. In 1880, the family moved to Port Elliot where Jessie's father established another general store, invested in real estate, and was elected the member of parliament for Encounter Bay. Jessie collected (numbered) MEL specimens (including algae) at Port Elliot, 1891, 1893–1896, 1898; Encounter Bay, 1893–1896; Murray River, 1893–1895; River Hindmarsh 1893; and near Adelaide 1895. She collected types of *Dasythamnion setosum* J.Agardh (1894), *Chrysymenia husseyana* J.Agardh (1894), named for her, *Plantago coronopus* var. *husseyana* F.Muell. (1895), named for her, *Erythrostachys prolifera* J.Agardh ex J.White (1912), and *Pimelea husseyana* F.Muell. ex Ewart (1921), named for her. Jacob Agardh identified Jessie's algal specimens for M. Jessie sold booklets containing specimens of 'flowers of the sea' for charity. After M's death, Jessie continued to collect for Agardh, Anna Weber van Bosse and other overseas botanists, and her specimens are at AD, BM, HBG, K, L, NSW, PC and PERTH. Jessie was a member of the Field Naturalists' section of the Royal Society of SA, and an honorary member of the Mueller Botanic Society, WA. She did not marry, and died in 1899 in Port Elliot aged 37. Forty letters (or lists of identifications) from M to Jessie survive, and eight letters from Jessie to M.

***MELISR:*** 720 specimens. Jessie L. Hussey/ Miss J.L. Hussey/ Miss J. Hussey/ Miss Hussey. ***References:*** ABC ('Hussey, Jessie Louise, Miss'); *Advertiser* (30 January 1894: 4, booklets of algae); *South Australian Register* (9 January 1899: 6, 'Death of Mr. C.H. Hussey'); *South Australian Register* (20 March 1899: 3, 'The late Miss J.L. Hussey'). ***Mueller Project letters:*** L93.00.00 (3) to Hussey; L93.06.08 from Hussey; L93.11.19, L93.12.18, L94.00.00 (13), L94.08.15, L94.10.27 to Hussey; L94.12.02 from Hussey; L95.00.00 (15) to Hussey; L95.01.03, L95.02.20, L95.04.04, L95.09.25, L95.10.04 from Hussey; L95.10.04 Hussey to Agardh; L95.10.05 from Hussey; L95.10.25, L95.11.13, L96.00.00 (2), L96.06.25, L96.08.30, L96.09.23 to Hussey. ***Portrait:*** R8G Melbourne (Appendix 1). ***Handwriting:*** RBG Melbourne (Appendix 2). ***Map:*** Appendix 3.

**IRVINE, Jemima Frances** née Burn, 1822 – 17 July 1918, coll. WA, NSW. Born in Scotland, the older of two children, to David Burn (?1799–1875) and Frances Maria née Eldred. Jemima and her father migrated to Tas. in 1826, where her grandmother owned the property 'Ellangowan'. Jemima's parents divorced in 1829, and in 1832 her father married Catherine née Fenton in Tas. In 1841, Jemima's father established 'Rotherwood' on the River Ouse. In 1844, Jemima married Charles James Irvine (c.1818–1865), an officer in the Imperial service at Port Arthur, and they had twelve children. Jemima was an artist and shell collector, and collected MEL specimens at Geographe Bay, 1888–1889, WA (her son Charles James Irvine was a master in the Adelaide Steamship Co.). She also collected MEL specimens at 'Corona Station' near Silverton, 1889, 1891 (a property managed by her son Claude Irvine), and the Barrier Ranges, 1889–1890, NSW. She collected types of *Helipterum troedelii* F.Muell. (1890), *Lenormandia hypoglossum* J.Agardh (1890), and *Curdiea irvineae* J.Agardh (1894), named for her. Jacob Agardh identified Jemima's algal specimens for M. There are also Jemima Irvine (as 'Mrs Irvine') specimens at BM, NMW, NSW and PERTH. She died in Hobart in 1918 aged 97. One letter from Jemima to M survives.

***MELISR:*** 683 specimens. Mrs J.F. Irvine/ Mrs J. Irvine/ Mrs Irvine. ***References:*** ABC (given as three separate entries: 'Irvine, Jemima Frances', Irvine Jemma, Miss [Mrs?]', 'Irvine, Mrs'); AD8 ('David Burn', viewed 2011); Gibbney & Smith (19B7, 'Charles James Irvine'); *Hobart Mercury* (18 July 1919: 2, death); *Hobart Examiner* (19 July 1919: B, death). ***Mueller publicatians:*** B90.10.01 (eponymy). ***Mueller Project letters:*** L89.09.30 from Irvine; LB9.09.29, L90.05.04 from Agardh. ***Portrait:*** Allport Library and Museum of Fine Art, Hobart (Appendix 1). ***Handwriting:*** RB M55 M1, R8G Melbourne (Appendix 2). ***Map:*** Appendix 3.

**JACKSON, Mary Anne** née Willett, 1851–1916, coll. Tas. Born in Tas., one of at least two children, to Mr Willett and Anne née Rearing. In 1869, Mary Anne married Robert Jackson (1835–1911), a lighthouse keeper on Deal Island. Mary Anne was unable to sign her marriage certificate. The Jacksons had thirteen children. Mary Anne collected MEL specimens (with her husband) on Deal Island, 1884. The specimens were forwarded to M by William Lambert Dobson. Mary Ann died at Table Cape in 1916 aged 65.

***MELISR:*** 63 specimens. Judge Dobson. [NB It is impossible to know which of these were collected by Mary.] ***References:*** John Whinray pers. comm. 15 January 2014; Queen Victoria Museum & Art Gallery, Launceston ('Jackson letter book'); 'Deal Island' (1885) *Papers and Proceedings of the Royal Society of Tasmania*: 282 [NB the collector is incorrectly identified as 'Mr Johnstone']; Indexes to Tasmanian BDM records, State Library of Victoria. ***Map:*** Appendix 3.

**JEFFERSON, (Mrs E.)**, fl. 1869–1880, coll. Vic. Collected MEL specimens (ferns) at Fernshaw and the Upper Yarra River, 1868–1869. One letter from Jefferson to M survives.

***MELISR:*** 3 specimens. Mrs Jefferson/ Jefferson. ***References:*** ABC ('Jefferson, [E.], Mrs'). ***Mueller publications:*** B69.07.03. ***Mueller Project letters:*** LB0.09.06 from Jefferson. ***Hondwriting:*** RB M5S M1, RBG Melbourne (Appendix 2). ***Map:*** Appendix 3.

**JOHNSTON, Maria Louisa (Minnie)** née Butcher, 19 November 1856 – 7 April 1921, coll. WA. Born in Richmond, Tas., one of at least four children, to pioneer settlers Edward William Burchell Butcher (b.1826) and Maria Susan née Schaw (d.1914). The Butchers moved first to Vic. and then WA where, in 1879, Minnie married a surveyor in Geraldton, Harry Frederick Johnston (1853–1915). They had eleven children. Minnie and her husband collected MEL specimens and seeds, n.d. She also received a silver medal from the Paris Exposition for a collection of Western Australia's pressed and dried wildflowers. Harry Johnston became Surveyor-General of WA in 1895 and died of an accidental gunshot wound in 1915. Minnie died in South Perth in 1921 aged 64.

***MELISR:*** no specimens. ***References:*** ABC ('Johnston, Minnie, née Butcher'); Johnston, F.M. (1962). *Knights and theodolites: A saga of surveyors*. Edwards & Shaw: Sydney; Indexes to Tasmanian BDM records, State Library of Victoria; WA-BDM (viewed 2013); *Bunbury Herald* (15 June 1915: 3); *West Australian* (9 April 1921: 1, death). ***Portrait:*** Johnston (1962, plate 11).

**JORDAN, M.** (Miss), fl. 1894, coll. Vic. Collected MEL specimens at Queenscliff, 1894.

***MELISR:*** 2 specimens. 'Miss M. Jordan/ M. Jordan'. ***References:*** ABC ('Jordan, Miss'). ***Map:*** Appendix 3.

**KELLY, (Mrs)**, fl. 1892, coll. Qld. Collected a MEL specimen at 'Caiwarro Station', and Paroo River, 1892.

***MELISR:*** 1 specimen. 'Mrs Kelly'. ***References:*** A8C ('Kelly, Mrs'). ***Map:*** Appendix 3.

**KENNEDY, E.** (Miss), fl. 1887, coll. NSW. Probably Edith Mary Kennedy (1867–1913), and/or Effie Isabel Kennedy (1871–1959). Born in NSW, two of eleven children, to settlers Robert Henry Kennedy (1826–1895) and Mary Bozzum Kennedy née Hume (1838–1915). Edith and/or Effie probably collected MEL specimens (as 'Miss E. Kennedy') at Upper Darling River, 1886–1887, and Wilcannia, n.d. In 1890, Edith married Edward King, a Qld pastoralist, and they had at least ten children. In 1896, Effie married Dr Louis A. Segol (1864–1908) and they had at least three children. Miss E. Kennedy's sister Jessie Ann Cotter also collected MEL specimens.

***MELISR:*** 11 specimens. Miss E. Kennedy/ Miss Kennedy. ***References:*** A8C ('Kennedy, Mary Bozzum/Bozzam'); NSW-BDM (viewed 2011); Grieve, P. (2004) 'The Kennedys' (<http://brightoncemetery.com>, viewed 2011). ***Mop:*** Appendix 3.

**KENNEDY, Mary Bozzum** née Hume, 7 September 1838 – 10 December 1915, coll. NSW. Born at 'Castlesteads Station', Burrowa, NSW, one of 14 children, to Rawdon Hume (1803–88), and Emma née Mitchell (1814–1887). In 1858, Mary married Robert Henry Kennedy (1826–95), of 'Wunnamurra Station', and they had eleven children. In 1879, the family moved to 'Wonnaminta Station' north of Broken Hill. Mary collected MEL specimens at the Barrier Range, 1885; the Darling River and Wilcannia, 1885–1889; Yandarlo, 1885–1886; Mount Lyell, 1886; Netallie, 1886; and Wonnaminta, 1886–1887. She collected types of *Bassia longicuspis* F.Muell. (1891), *Eragrostis kennedyae* Turner (1894), and *Ptilotus calostachyus* var. *kennediae* Ewart & Jean White (1908), named for her, and recorded Aboriginal names for plants. *Grevillea kennedyana* F.Muell. (1888) was also named for her. Mary's husband, and daughters Jessie Ann Cotter and Miss E. Kennedy, also collected MEL specimens. Mary's husband also collected specimens for Joseph Maiden. Mary died in Melbourne in 1915 aged 77. One letter from M to Mary survives.

***MELISR:*** 551 specimens. Mrs M.B. Kennedy/ Mrs Kennedy/ Mrs R.H. Kennedy/ Mrs B. Kennedy. ***References:*** ABC ('Kennedy, Mary Bozzum/Bozzam'); NSW-BDM (viewed 2011); Grieve, P. (2004) 'The Kennedys' (<http://brightoncemetery.com>, viewed 2011). ***Mueller publicotions:*** B88.07.03. ***Mueller Project letters:*** L85.12.12 to Kennedy; L87.05.13 from Maiden; L89.10.21 from Turner. ***Handwriting:*** MEL 0019993A (Appendix 2). ***Mop:*** Appendix 3.

**KENTISH, Martha (Mattie) Elizabeth** (later Mrs Mann), 1876–1957, coll. Vic. Born in Inglewood, Vic., one of at least four children, to Henry Kentish (c.1827–1920) and Elizabeth Francis née Webb (c.1836–1918). Martha's parents were married in SA, but settled on a grazing property 'Pyramid View' at Pyramid Hill, Vic. Martha's father was declared insolvent in 1889. Martha lived at Charlton with her brother, Walter, for several years before moving to Melbourne to live with her parents in Kew. Recruited by her cousin Jessie Hussey, Martha collected MEL specimens at Wychitella, 1895. In 1904, she married James Barrett Mann (1875–1968), a farmer at 'Morningquest', Quambatook, and they had three children. Martha died in Quambatook in 1957 in her 81st year.

***MELISR:*** 30 specimens. Miss Martha Kentish/ Miss M. Kentish. ***References:*** ABC ('Kentish, M., Miss'); Indexes to Victorian BDM records, State Library of Victoria'; Mann, J.B. (1981). *The recollections of James Borrett Monn, founder of Morningquest*. Swan Hill, Vic.; *Kerong Times* (22 November 1889: 2, insolvency); *Quombotook Times* (9 January 1957, obituary). ***Mueller Project letters:*** L95.04.04 from J. Hussey (locality information). ***Portroit:*** Mann (1981: 4, M.E. Mann, Lila Mann, Bruce Mann, J.B.Mann, 1890).

**KING, Georgina** (Miss), 1845 – 7 June 1932, coll. NSW. Born in Fremantle, WA, one of seven children, to the clergyman George King (1813–1899), and Jane née Stewart (d.1900). The family settled in Sydney in 1847 where Georgina's father became incumbent of St Andrew's parish. Georgina tried to become a scientist but was frustrated by restrictions on women's participation in educational and scientific institutions. She collected MEL specimens at the Blue Mountains, 1892–1893, 1895, 1897; west of the Blue Mountains, 1893, 1895; Port Jackson, 1893–1896; Springwood, 1893; Croydon Downs, Darling River, Elizabeth Bay, Homebush, and Hunter River, 1894; Castlereagh River, 1895; Hawkesbury River, 1896; and Taralga, 1897. Georgina collected the type of *Pultenaea subternata* H.B.Will. (1925). Georgina's friend Mrs John Brown also collected MEL specimens. Georgina died, unmarried, in Sydney aged 87 in 1932. Seven letters from M to Georgina survive, and five from Georgina to M. M gave Georgina inscribed copies of his *Select extra-tropical plants* (1881) and (1895).

***MELISR:*** 295 specimens. Miss Georgina King/ Miss G. King/ Miss King. ***References:*** ABC ('King, Georgina'); ADB ('George King', viewed 2011); Gibbney & Smith (1987, 'King, Georgina'); Carter, J.M.T. & Cross, R. (2013). *Ginger for pluck: the life and times of Miss Georgina King*. Wakefield Press: Kent Town, SA; *Sydney Morning Herald* (11 June 1932: 18, death). ***Mueller Project letters:*** L90.00.00, L92.12.04, L94.00.00 to King; L94.08.14, L94.08.28, L94.10.16, L94.10.16 from

King; L96.07.14 to King; L96.09.16 from King; L96.09.24, L96.09.28, L96.09.31 to King. ***Portrait:*** RB MSS M13, RBG Melbourne (Appendix 1). ***Handwriting:*** RB MSS M13, RBG Melbourne (Appendix 2). ***Map:*** Appendix 3.

**KNIGHT, Ann Augusta (Gussie)** née McKail, 27 July 1840 – 18 August 1904, coll. WA. Born in Albany, WA, one of at least four children, to a businessman, John McKail (c.1810–1871), and Henrietta Jenkins (c.1823–1888). The family established the firm of John McKail & Co. in Albany. In 1863, Gussie married a settler, William Grills Knight (1839–1903), and they had four children. The family ran 'Woodlands' estate at Porongurup. Gussie collected MEL specimens at Porongurup, 1869–1870, King George Sound, 1882, and upper Gordon River, n.d. Her son, Ernest William Knight (b.1869), also collected MEL specimens. The family moved to Albany in the early 1870s where Gussie's husband worked as a businessman, and held the office of mayor three times. Gussie was a member of the Wilgie Art Club. She was a wildflower artist and her paintings won a bronze medal at the Colonial and Indian Exhibition, 1886. Gussie died in Albany in 1904 aged 64.

***MELISR:*** 246 specimens. Mrs A. Knight/ Mrs W.G. Knight/ Mrs Knight. ***References:*** ABC ('Knight, Ann Augusta', 'Knight, William Grylls'); Rica Erickson notes (Willis papers, WILL001100, series 4, Box 1, RBG Melbourne); *Western Mail* (9 May 1903: 15, husband's death); *Western Mail* (10 September 1904: 15, death). ***Map:*** Appendix 3.

**KUENTZ, L.** (Miss), fl. 1885, coll. NSW. Collected MEL specimens at Wanganella near Edwards River, Coonamble, near the Murrumbidgee River, between the Lachlan and Darling Rivers, and at Manly, 1885.

***MELISR:*** 94 specimens. Miss L. Kuentz/ Miss Kuentz. ***References:*** ABC ('Kuentz, L, Miss'); Willis et al. (1986, 'Kuentz, Louise Miss'). ***Map:*** Appendix 3.

**LAMONT, Eva Frances** (later Mrs Bowkett), 1861 – 24 May 1945, coll. Qld. Born in Melbourne, the eldest of five daughters, to Edward Harrison Lamont (d.1871) and Charlotte Augusta Rose née Manton (1842–1901). Eva collected MEL specimens (including fungi) in Qld (as 'Miss Lamont') at Springsure and 'Coorabelle' i.e. 'Corrabelle Station', 1885–1886; Herbert River, 1888–1889; Johnstone River, 1888–1889; Mount Maud, Port Douglas and Trinity Bay, 1888; and at the source of the Burdekin River and Herberton, 1889. In 1889, Eva married William David Bowkett (d.1903), a physician in Herberton, and they had one child. Eva collected MEL specimens (as 'Mrs Bowkett') at Hodgkinson River and Walsh River, 1889, and Herbert River, 1890. She collected the type of *Colus muelleri* E.Fisch. (1890). Eduard Fischer identified Eva's fungal specimens for M. Eva's grandmother, Charlotte Manton, also collected MEL specimens. In 1954, Eva died in Sydney aged 84. Two of her letters to M survive (one written as Miss Lamont, and one as Mrs Bowkett). M gave her a copy of his *Select extro-tropical plants* (1888).

***MELISR:*** 140 specimens. Eva Lamont/ Miss E. Lamont/ Miss Lamont/ Lamont/ Mrs Dr Bowkett/ Mrs Bowkett/ Mrs Bowkitt/ Miss Bowkitt. ***References:*** ABC (given as two separate entries: 'Lamont, Eva F.' & 'Bowkett [Bowkitt], Eva F.'); Indexes to Victorian BDM records, State Library of Victoria; NSW-BDM (viewed 2011); Qld-BDM (viewed 2011); Fischer, E. (1890). Untersuchungen zur vergleichenden Entwicklungsgeschichte und Systematik der Phalloideen. *Neue Denkschr. Schweiz. Naturf. Ges.* **32**: 63; *Argus* (14 February 1860: 4, parent's marriage); *Brisbane Courier* (14 January 1890: 4, marriage); *Brisbane Courier* (16 April 1901: 6, mother's death); *Brisbane Courier* (17 March 1903: 5, husband's death); *Sydney Morning Herald* (14 June 1919: 12, daughter's marriage); *Sydney Morning Herald* (29 May 1945: 12, death). ***Mueller Project letters:*** L86.05.23 from Lamont; L90.01.17 from Bowkett. ***Handwriting:*** RB MSS M1, RBG Melbourne (Appendix 2). ***Map:*** Appendix 3.

**LANDSBOROUGH,** (Miss), fl. 1890s, coll. Qld. Collected (numbered) MEL specimens of mosses at Toowoomba (as 'Towomba'), n.d.

***MELISR:*** 7 specimens. Miss Landsborough. [NB labels in M's handwriting.] ***Map:*** Appendix 3.

**LEWELLIN, Madeline Mary Ravenna** (Miss), 1854 – 24 November 1944, coll. Vic. Born in Vic., one of five daughters, to a physician, Dr John Henry Hill Lewellin (c.1818–1886), and Grace Elizabeth née Danneby (d.1888). The family lived in Prahran. Madeline was an artist and collected and painted MEL specimens (fungi) at 'Tarwin Meadows' run, 1880, including types of *Hygrophorus lewellinoe* Kalchbr. (1880), named for her, *Agaricus rhytipelto* F.Muell. (1882), *Agaricus ocutotus* Kalchbr. & F.Muell. (1882), *Agaricus gloucescens* Kalchbr. (1882), *Hygrophorus gilvus*, Kalchbr. (1882), *Clovario kolchbrenneri* F.Muell. ex Kalchbr. (1882), and *Clovaria lurido* Kalchbr. (1882). Károly Kalchbrenner identified Madeline's fungal specimens for M. Madeline's hosts at 'Tarwin Meadows' were George Black (1813–1902) and Isabella Emily née Watson, a renowned wildflower painter. Madeline was elected a member of the FNCV in 1885. Her mother sent specimens of skeletonised leaves to John Lubbock via M. Madeline died in Hampton in 1944 aged 88, unmarried. One letter from Madeline's mother to M, and one letter from M to Madeline survives.

***MELISR:*** no specimens. ***References:*** ABC ('Lewellin, M.M.R., Miss'); *Victorian Naturalist* (1957 **74**: 71–2); ADB ('Black, George',

viewed 2013); *Argus* (13 November 1885: 6, FNCV); *Argus* (9 August 1888: 1, mother's death); *Argus* (25 November 1944: 18, death); Australian Medical Pioneers Index (<www.medicalpioneers.com>, viewed 2011). ***Mueller Project letters:*** L85.05.29 from Grace Lewellin; L85.05.30 to Hooker; L9S.11.16 to Madeline Lewellin.

**LOADER, (Miss),** fl. 1885, coll. SA. Collected a MEL specimen at Wakefield River, 1885.

***MELISR:*** 1 specimen. ***References:*** ABC ('Loader, Miss'). ***Map:*** Appendix 3.

**LODDER, Mary** (Miss), 1853–1911, coll. Tas. Born in England, one of three children, to Major-General William Wynne Lodder (c.1816–1891), and his wife Elizabeth Frances (d.1907). In 1875, the family migrated to Tas. for the health of Mary's father, a retired army officer. They built a residence, 'Lonah', on a 100 acre estate near Ulverstone. Mary collected MEL specimens (algae) at Leven River, 1886–1889; Ulverstone, 1886; and Strahan, 1909. Jacob Agardh identified Mary's algae for M. Mary also collected shells and donated her collection to the Launceston Museum. She died, unmarried, in Launceston in 1911 in her 58th year. One letter from Mary to M survives. M gave her a copy of his (1888) *Key to the system of Victorian plants*.

***MELISR:*** 42 specimens. M. Lodder/ Miss Lodder/ M. Loder. ***References:*** ABC ('Lodder/Loder, Mary'); *Launceston Examiner* (12 September 1891: 1, father's death); *Launceston Examiner* (11 November 1907: 1, mother's death); *Launceston Examiner* (6 March 1911: 5, death); Launceston Historical Society (<www.launcestonhistory.org.au>, 'The "quiet" Miss Mary Lodder'). ***Mueller Project letters:*** L89.12.23 from Lodder; L89.06.30 to Agardh. ***Handwriting:*** RB MSS M10Ba, RBG Melbourne (Appendix 2). ***Map:*** Appendix 3.

**LOGUE, Kate French G.** (later Mrs Blight), 1867–1968, coll. WA. Born in WA, the fifth of twelve children, to settlers William Logue (d.1912) and Sarah Mary née Clarke (d.1914). The Logues ran 'Sunny Vale', a mixed farm near Harvey. Kate became a school teacher, and taught at the first schools in the Harvey district and on the upper Warren, and also at Grass Valley, Moojebing, and near Waroona. She collected MEL specimens at Harvey River, July 1889. There are also 'Miss Kate F.G. Logue' specimens at K (1888–1889, 168 specimens). Kate's cousin Julia Sewell also collected MEL specimens. In 1913, Kate married William James Blight (c.1854–1934), a farmer near Harvey. It was a second marriage for Blight who already had eleven children. Kate and William did not have any children. After her husband's death, Kate resumed teaching. She died in 1968 aged 101.

***MELISR:*** 69 specimens. Miss Kate Logue/ Miss K. Logue/ K. Logue. ***References:*** ABC ('Logue, Kate French'); Rica Erickson notes (Willis papers, WILL001100, series 4, 8ox 1, RBG Melbourne); WA-BDM (viewed 2011); *West Australian* (22 July 1912: 6, father's death); *West Australian* (18 April 1914: 1, mother's death); *Western Mail* (11 January 1934: 40, husband's death); *Western Mail* (8 February 1934: 24, husband's obituary); Jackson (1901). ***Partrait:*** Kate French 8light, 1029B, State Library of Western Australia (Appendix 1). ***Map:*** Appendix 3.

**LUKIN, (Miss),** fl. 1874, coll. WA. Possibly Laura Lukin (1857–1933) (later Mrs Phillips). Born in Perth, WA, the sixth daughter of settlers Lionel Lukin (c.1801–1863) and Jane Sarah née Cruikshank (c.1818–1872). The Lukins established the property 'Deepdale' near Toodyay. Laura was the Lukins' only unmarried daughter in 1874. She collected MEL specimens (as 'Miss Lukin') at Fremantle, 1874. In 1881, she married John Hugh Phillips (c.1860–1917), a pastoralist at Culham. They had three children. Laura died in 1933 in Toodyay in her 76th year.

***MELISR:*** 30 specimens. Miss Lukin. ***References:*** ABC (identified as 'Lukin, Mrs Rachel Elinor, née Clifton'). ***Map:*** Appendix 3.

**McADAM, Jennie E.** (Miss), fl. 1889, Vic. Collected MEL specimens at Swan Hill and the Murray River, June–July 1889.

***MELISR:*** 36 specimens. Jennie E. McAdam/ Miss Jennie McAdam/ Miss J. McAdam/ Miss McAdam/ Miss McAdams/ Miss Macadam. ***References:*** A8C ('McAdam[s] [Macadam], J.E., Miss'). ***Map:*** Appendix 3.

**McCANN, (Miss),** fl. 1881, coll. Vic. Probably Mona Anna Clare McCann (c.1872–1930), the eldest daughter of Torrens McCann (c.1831–1896) and Annie Bellew née McDonald (1838–1924). Mona was born and grew up at 'Rockalpine House', Snowy Creek (later known as Granite Flat), which the McCann family ran as a hotel. 'Miss McCann' collected MEL specimens at Snowy Creek, 1881. Mona's mother Annie Bellew McCann also collected MEL specimens. Mona did not marry and died in 1930 in Albury, NSW, aged 58.

***MELISR:*** 6 specimens. Miss McCann. [NB Torrens and Annie McCann had a second daughter, Eva Marie Angela McCann (1877–1942), but she was only four years old in 1881. It was also the convention in the 19th century for the eldest unmarried daughter to be known as 'Miss' without any initials.] ***References:*** NSW-BDM (viewed 2011); NSW Death Certificate (1930/020401 Mona Anna McCann). ***Map:*** Appendix 3.

**McCANN, Annie Bellew** née McDonald, 1838 – 20 June 1924, coll. Vic. Born at Rockharshall, Ireland, to Capt. Andrew and Margaret McDonald. In 1856, Annie married Torrens McCann (c.1831–1896), and they had nine children (three of whom died in childhood). The family migrated to Vic. in 1858 and settled at 'Rockalpine House', Snowy Creek (later known as Granite Flat), which they ran as a hotel. Annie also gave lessons to local children until a school was built in the late 1870s. Annie collected (numbered) MEL specimens (including liverworts and mosses) at Buffalo Range 1881–1882; Snowy Creek, 1881, 1885–1886; Mount Hotham, 1882; and the Ovens River, 1882–1887, 1890–1891. She collected types of *Frullania homoticoma* Steph. (1889), *F. victoriensis* Steph. (1910), *Zygodon remotidens* Müll.Hal. (1898) and *Orthotrichum ocroblephoris* Müll.Hal. (1898). Franz Stephani identified Annie's liverworts for M, and Carl Müller identified her mosses. After M's death, Annie continued to send specimens for identification to J.G. Luehmann and Alfred Ewart at MEL. Her husband and a daughter (see Miss McCann) also collected MEL specimens. There are also Annie McCann specimens at BM, G and GLAM. She was an artist in watercolours, embroidered wildflowers (which she called 'needle painting'), and published a book of poetry in 1888. After her husband died, Annie lived in Albury NSW and worked as a teacher and postmistress. She died in Albury in 1924 aged 86. Two letters from Annie to M survive. A bushfire destroyed 'Rockalpine House' in 1939.

***MELISR:*** 199 specimens. Mrs A. McCann/ Mrs McCann/ McCann. ***References:*** A8C ('McCann, Annie Bellew'); NSW-BDM (viewed 2011); *Sydney Morning Herold* (16 June 1924: 7); *Hobart Mercury* (17 June 1924: 6); *Morning Moil* (21 June 1924); *Adeloide Register* (24 June 1924: 6); *Adeloide Register* (30 June 1924: 12, death); Colquhoun, S.A. (1954). *Mitto Mitto from the early pioneer doys.* Argus & Australasian; McCann, Mrs T. (1888). *The poetical works of Mrs Torrens McConn.* George Robertson & Co.: Melbourne. ***Mueller Project letters:*** L82.03.00, L82.09.10 from McCann. ***Partrait:*** RB MSS M1, RBG Melbourne (Appendix 1). ***Hondwriting:*** R8 MSS M1, RBG Melbourne (Appendix 2). ***Map:*** Appendix 3.

**McDONALD, Nellie** (Miss), fl. 1886–1897, coll. SA, Vic., NSW. Collected MEL specimens in SA at Aldgate, Bordertown, Bridgewater, Cookes Plains, Crafers, Gawler Beach, Grunthal, Mount Barker, Mount Lofty, Murray Bridge, Two Wells, and Virgina, 1886; in NSW at the Darling River, Macleay River, and Mount Murchison, 1894; and, in Vic., in the Wimmera, 1885–1886; and Jeparit, 1897, 1900.

***MELISR:*** 49 specimens. Miss Nellie McDonald/ Miss N. McDonald/ Miss McDonald. ***References:*** A8C ('MacDonald/McDonald, Nellie, Miss'). ***Map:*** Appendix 3.

**McDOUGALL, (Miss)**, fl. 1885, coll. Vic. Collected a MEL specimen at Murtoa, 1885.

***MELISR:*** 1 specimen. Miss McDougall. ***Map:*** Appendix 3.

**McEWEN [McEWAN], (Mrs Heywood)**, fl. 1892, coll. Tas. Collected MEL specimens (lichens) in Tas., 1892.

***MELISR:*** no specimens. ***References:*** ABC ('McEwen [McEwan], Heywood, Mrs').

**McHARD, Mary Ann** née Jones, 25 December 1825 – 18 June 1912, coll. WA. Born, one of five children, to a glazier and signwriter, Richard Jones (c.1795–1876), and his wife (d.1830). The family migrated to WA in 1829 and lived in and near Perth. In 1845, Mary married Thomas McHard (1819-1864), a widower and storekeeper in Fremantle, and they had four daughters. After the death of her husband, Mary, along with her children, father, and two brothers, became pioneering settlers at the 'Southampton' estate near Balingup. Mary collected MEL specimens at Blackwood River, 1873–1895; Preston River, 1876; Geographe Bay, 1881; Busselton, 1884; Augusta, Cape Leeuwin and York, 1885; Bayswater, 1887; Gingin, 1892–1893; Victoria Plains, 1893; towards the Murchison River, 1894; and Dardanup, n.d. Mary collected types of *Pultenoea skinneri* F.Muell. (1874), *Xerotes endlicheri* F.Muell. (1874), and *Boronio mochordiano* F.Muell. (1875), named for her. Along with one of her unmarried brothers, Mary retired to Bunbury where she died in 1912 aged 87. M gave her a copy of his *Select extro-tropical plants* (1885). Seven letters from Mary to M survive.

***MELISR:*** 2022 specimens. Mrs M. McHard/ Mrs McHard/ Mrs MacHard/ Mrs McHardy/ Mrs M. Hard. ***References:*** ABC ('McHard, Mary Ann'); WA-BDM (viewed 2011); DWA (p. 214); *Inquirer & Commercial News* (29 November 1879: 2, father's death); *West Australian* (24 June 1912: 8, 'Death of an old colonist' obituary); *Western Mail* (13 June 1929: 27, 'Pioneers'). ***Mueller publications:*** B7S.08.01 (eponymy). ***Mueller Project letters:*** L83.01.11, L88.00.00, L88.00.00, L88.03.26, L90.12.19, L91.03.30, L92.09.00 from McHard. ***Partroit:*** Mary McHard, 1870, 37308, State Library of Western Australia (Appendix 1). ***Handwriting:*** R8 MSS M120, R8G Melbourne (Appendix 2). ***Map:*** Appendix 3.

**McKELLAR, (Miss)**, fl. 1886, coll. Qld. Probably Jane Campbell McKellar (1852–1936). Born, the eldest of four daughters, to pioneer settler Thomas McKellar (1819–1900) and Catherine née McColl (c.1822–1904). The McKellars owned a succession of pastoral properties in Vic., SA, and Qld, including 'Raglan Station' in Qld, 1885–1898. Jane probably collected MEL specimens (as 'Miss McKellar') at Raglan Creek, 1886. She did not marry, and died in Melbourne in 1936 in her 84th year.

***MELISR:*** 23 specimens. Miss McKellar. [N8 Thomas McKellar's other three daughters were also unmarried in 1886: Rachel Harkness McKellar (1857–1935, later Mrs Henry Clifford Brock Hollinshead), Catherine Hamilton McKellar (1860–1910), and Mary Jane Grange McKellar (1864–1944, later Mrs Arthur Edwin Ronald).] ***References:*** ABC ('McKellar, Miss'); Harthern Family Tree (<ancestry.com.au>, viewed 2013); Burke, B. (1891). *Genealogical and heraldic history of the colonial gentry*. Harrison & Sons: Melbourne; *Australian pastoralists' review* (15 August 1900: 346, father's obituary); *Brisbane Courier* (27 October 1900: 14, father's will); *Argus* (24 March 1904: 1, mother's death); *Argus* (29 May 1935: 1, death Mary Jane Grange Brock Hollinshead). ***Map:*** Appendix 3.

**MACLAINE, Emily Ann** née Salier, 7 August 1844 – 28 February 1897, coll. Tas. Born in Hobart, Tas., to George Salier and Ann Georgiana née Bush (c.1821–1845). In 1870, Emily married a pastoralist, John Joseph Hone Maclaine (1833–1909), and they had nine children. The family held leases on Clarke, Flinders, Preservation and Passage Islands in the Furneaux Group. Emily collected MEL specimens (including algae and lichens) at Preservation and Clarke Islands, 1891–1894. Her husband also collected MEL specimens. In 1897, Emily died on Clarke Island aged 53.

***MELISR:*** 133 specimens. Mrs E. Maclaine/ E. Maclaine/ Mrs Maclaine/ Maclain/ E. Maclaeur. ***References:*** ABC ('Maclaine, Emily Ann', 'Maclaine, J.D.'); James Harvey 1826–1900 (<www.harvey.cocker.id.au>, viewed 2011); eHeritage Tasmania (<eheritage.statelibrary.tas.gov.au>, viewed 2011). ***Mueller Project letters:*** L93.10.19 to Rodway. ***Map:*** Appendix 3.

**McLEAN/MacLEAN, S.** (Miss), fl. 1894, coll. Vic. Collected MEL specimens at McKenzie Creek, the Wimmera, and Yarriambiack Creek, 1894.

***MELISR:*** 17 specimens. Miss S. Maclean/ Miss S. McLean/ Miss S.[J.] McLean/ Miss McLean. ***References:*** ABC ('McLean/Maclean, S., Miss'). ***Map:*** Appendix 3.

**MADDEN, Annie Eliza** née Francis, c.1845–1924, coll. Vic. Born, one of fifteen children, to James Goodall Francis (1819–1884) and Mary Grant née Ogilvie. In 1874, Annie married a solicitor and politician, Frank Madden (1847–1921), and they had seven children. Annie collected a MEL specimen at Cobden, 1893, and another at an unknown locality. Her husband also collected MEL specimens. Annie became 'Lady Madden' after her husband was knighted in 1911. She died in South Yarra in 1924 aged 79.

***MELISR:*** 2 specimens. Mrs Madden. ***References:*** ABC ('Madden, Frank'); ADB ('Madden, Sir Frank', 'Francis, James Goodall'); Indexes to Victorian BDM records, State Library of Victoria. ***Map:*** Appendix 3.

**MANIFOLD, (Mrs)**, fl. 1891, coll. Vic. Collected a MEL specimen (fungus) at Port Phillip, 1891.

***MELISR:*** 1 specimen. Mrs Manifold.

**MANTON, Charlotte** née Wilkinson, c.1811– 12 June 1896, coll. Vic. Born in Kensington, England, to a Mr Wilkinson and Dinah née Weeks. Charlotte married John Augustus Manton (c.1790–1852), a merchant, in London c.1831. They had eight children. The Mantons migrated to Victoria in c.1840 where Charlotte's husband established a successful business in Melbourne. In the 1870s, Charlotte took up land near Mirboo in East Gippsland, and lived at the residence 'Brooklands', Boolarra. She collected (numbered) MEL specimens (including cryptogams) at Tarwin, Mirboo, 1882, and Snowy Creek, 1889. Her granddaughter Eva Frances Lamont also collected MEL specimens. In 1896, Charlotte died in Melbourne aged 85. One letter from Charlotte to M survives.

***MELISR:*** 8 specimens. Charlotte Manton/ MrsManton/ Manton. ***References:*** ABC ('Manton, [C/G.], Mrs'); Indexes to Victorian BDM records, State Library of Victoria; Vic. Death Certificate (1896/7850 Charlotte Manton); *Argus* (11 December 1852: 4, husband's death); *Argus* (20 August 1896: 6, death); *Gippsland Times* (21 July 1879: 3, land). ***Mueller Project letters:*** L82.10.23 from Manton. ***Handwriting:*** RB MSS M1, R8G Melbourne (Appendix 2). ***Map:*** Appendix 3.

**MARKES, (Mrs)**, fl. 1895, coll. WA. Collected MEL specimens at Murchison River, and Coolgardie, 1895. Markes and her husband sent living specimens of *Verticordia* to Kew Botanic Garden via M.

***MELISR:*** 2 specimens. Mrs Markes. ***References:*** ABC ('Markes, Mrs'). ***Mueller Project letters:*** L93.06.03, L93.08.27 to Thiselton-Dyer.

**MARTIN, (Mrs)** see **Campbell, Flora Mary**

**MATTHIESSEN, (Mrs)** see **Wehl, Louise Therese**

**MEREDITH, Louisa Anne** née Twamley, 20 July 1812 – 21 October 1895, coll. Tas. Born in England, to Thomas Twamley and Louisa Ann née Meredith. Educated by her mother, Louisa published her first book of poems and illustrations in 1835. In 1839, she married Charles Meredith (1811–1880), and they had four sons. The family moved to Tas. in 1840 and lived at 'Springvale' until 1844, Poyston until 1848, and then Swansea. Louisa was an author and artist, and published books about the natural history of Australia. She collected MEL specimens at Orford, 1875, and near Swanport, 1884. *Antennaria nubigena* var. *meredithae* F.Muell. (1871), was named for her. Jacob Agardh identified

Louisa's algal specimens for M. She also collected 8M and N5W specimens, and specimens of insects and fish. In 1884, she was granted a pension of £100 a year by the Tas. government for her artistic services to the colony. 5he died in Melbourne in 1895 aged 83.

***MELISR:*** 23 specimens. L.A. Meredith/ Mrs Meredith/ Meredith. ***References:*** ABC ('Meredith, Louisa Anne'); ADB (viewed 2011); Rae-Ellis, V. (1979). *Louiso Anne Meredith: A tigress in exile.* Blubber Head Press: Hobart. ***Mueller publications:*** B71.13.05 (eponymy). ***Mueller Project letters:*** L71.09.07, L72.03.26, L74.12.01 to Agardh. ***Partrait:*** Wikimedia Commons (Appendix 1). ***Mop:*** Appendix 3.

**MOONEY, O.** (Miss), fl. 1867–1869, coll. Vic. Collected MEL specimens (including fern spores). Lived in St Kilda, Vic.

***MELISR:*** no specimens. ***References:*** *Argus* (19 January 1867: 5). ***Mueller publicatians:*** B69.07.03.

**MORGAN, (Mrs)** *see* **Scott, Harriet**

**MUELLER/MÜLLER, Clara Christine Maria** (later Mrs Wehl), 1833 – 31 July 1901, coll. SA. Born in Rostock, Mecklenburg, one of nine children, to a customs official, Friedrich Müller (1794–1835), and Louise née Mertens (1797–1840). In 1847, Clara migrated to 5A with her sister Bertha and brother M. Clara collected MEL specimens (as 'Miss Mueller') in 8ugle Ranges, 1848, and Barossa Range, n.d. In 1853, she married a physician, Dr Eduard Wehl (1824–1876). They settled in Mount Gambier, and had fifteen children. Clara's husband, and at least three of their children including Louise, Marie and Meta Wehl, also collected MEL specimens. The family moved to Millicent in 1871. Clara collected MEL specimens (as 'Mrs Wehl') at Lake 8onney, 1874, 1882; Mount Gambier, 1880; Mount Burr, 1881–1887; sources of 8roughton River, 1894; and MacDonnell 8ay (including algae), 1894. M named the genus *Wehlia* for Clara and her husband in 1876. There are also Clara specimens (as 'Mrs Wehl') at AK. Clara died at Millicent in 1901 aged 68. One letter from Clara to M, and one from M to Clara survive. M gave Clara copies of *Schleswig-Holstein Meerumschlunger* (1865), and *The poetical works of Mrs Torrens M'Cann* (1888).

***MELISR:*** 74 specimens. C. Mueller/ C.C.M. Wehl/ C. Wehl/ Mrs E. Wehl/ Mrs Dr Wehl/ Mrs Wehl. ***References:*** ABC (given as two separate entries: 'Mueller, Clara' & 'Wehl, Clara'). ***Mueller publications:*** B76.03.01 (eponymy). ***Mueller Project letters:*** L66.08.29 from Clara; L94.03.21 to Clara. ***Partrait:*** RB MSS M106-17, RBG Melbourne (Appendix 1). ***Hondwriting:*** RB MSS M106-17, RBG Melbourne (Appendix 2). ***Map:*** Appendix 3.

**MURRAY, (Miss),** n.d., coll. WA. Collected a MEL specimen at Murray River, n.d.

***MELISR:*** 1 specimen. Miss Murray. [NB label is in M's handwriting.] ***Map:*** Appendix 3.

**MURRAY, (Mrs),** fl. 1883–1885, coll. Vic. Collected MEL specimens in Gippsland, 1883, 1885.

***MELISR:*** 8 specimens. Mrs Murray/ Murray.

**MURRAY, Annie (Miss),** fl. 1894, coll. NSW. Collected MEL specimens at Clarence River, 1894.

***MELISR:*** 45 specimens. Miss Annie Murray/ Miss A. Murray. ***References:*** ABC ('Murray, Annie, Miss'). ***Map:*** Appendix 3.

**NEWCOMBE, (Miss),** fl. 1890, coll. Vic. Collected a MEL specimen (alga) at Warrnambool, 1890. There are also Newcombe specimens at 8.M.

***MELISR:*** no specimens. ***References:*** ABC ('Newcombe, S., Miss').

**NORTH, Marianne** (Miss), 24 October 1830 – 30 August 1890, coll. WA. 8orn in England, the eldest daughter of Frederick North and Janet née Marjoribanks. Marianne was an artist, and devoted herself to painting flowers and travelled around the world to do so. She collected MEL specimens inland from Champion 8ay, 1880–1881. Marianne met M in Melbourne in 1880 and 1881. In 1882, a gallery for her paintings opened at Kew Botanic Garden. Marianne died at Alderly England in 1890 aged 59.

***MELISR:*** 2 specimens. Miss North. ***References:*** ABC ('North, Marianne'); Vellacott, H. (1986). *Some recollections of o hoppy life: Marianne North in Austrolio ond New Zeoland.* Edward Arnold: Caulfield. ***Partrait:*** Wikimedia Commons (Appendix 1). ***Map:*** Appendix 3.

**NOTT, (Mrs I.),** fl. 1864–1868, coll. Vic. Collected MEL specimens at Maldon, 1864–1868.

***MELISR:*** 31 specimens. Mrs I. Nott/ Mrs Nott/ V. Nott/ Nott. ***References:*** ABC ('Nott, Mrs & Mary'). ***Mueller publications:*** B69.07.03 (Mrs Nott, Maldon). ***Map:*** Appendix 3.

**OAKDEN, Emma** (Miss), 20 May 1848 – 23 January 1889, coll. Tas. Born in Launceston, Tas., one of six children, to the merchant Philip Oakden (1784–1851), and Georgina née Cowie (d.1889). Emma collected MEL specimens around Launceston (incl. Cataract Gorge), 1885–1889; Ross, 1885–1889, 1887, 1889; George Town, 1885–1886; 8eaconsfield, 1886; Macquarie River, 1886–1887; South Esk, 1886–1889; Tamar River, 1886–1889; Blythe River, 1887; Distillery Creek, 1887–1888; Mersey River, 1887; North Esk River, 1887; and Circular Head, Feb. 1888. Emma drowned in Cataract Gorge in 1889 aged 51.

***MELISR:*** 259 specimens. Miss E. Oakden/ Miss Oakden. [N8 these include 'E. Oakden' and 'Oakden' specimens from Mount Wellington, 1890–1891; Port Sorell, 1890–1891; South Esk River, 1890; Launceston, 1891 and Ross, 1891, Tas. that postdate Emma's death. None of Emma's siblings had first names beginning with 'E'.] ***References:*** A8C ('Oakden, Emma'); Indexes to Tasmanian BDM records, State Library of Victoria; *Launceston Examiner* (24 January 1889: 3, death). ***Mueller Project letters:*** L89.05.20 from Nordstedt. ***Map:*** Appendix 3.

**O'HALLORAN, (Miss),** fl. 1894, coll. 5A. Probably Florence Julia O'Halloran (1874–1921). Born at O'Halloran Hill, 5A, one of two children, to a stipendiary magistrate, Thomas Joseph Shuldham O'Halloran (1835–1922), and Harriet Julia née Woodforde (b.c.1842). Florence probably collected MEL specimens (as 'Miss O'Halloran') (algae) at Waterloo Bay and Moonta Bay, 1894. Florence's father also collected MEL specimens. In 1898, Florence married Herbert Algar Sweetapple (d.1921), and they had two children. Florence died in 1921 in her 47th year.

***MELISR:*** 2 specimens. Miss OHalloran. ***References:*** ABC ('O'Halloran, Thomas Joseph Shuldham'); Indexes to South Australian BDM records, State Library of Victoria; 'Ross and O'Halloran family tree' (<ancestry.com.au>, viewed 2013). ***Mop:*** Appendix 3.

**PALMER, (Mrs),** fl. 1861–1865, coll. Tas. Collected MEL specimens (algae) at George Town, 1861, 1865; Windmill Point, 1863, 1865; Point Effingham and Sea Weed Point, 1865; and 'Marion Villa', n.d. 'Marion Villa', George Town, was the residence of George Cox and then his daughter Eliza Cox, who also collected MEL specimens.

***MELISR:*** 17 specimens. Mrs Palmer. ***References:*** ABC ('Palmer, Mrs'). ***Map:*** Appendix 3.

**PARKE, (Mrs E.C.),** fl. 1889, coll. Vic. Collected a MEL specimen at Aireys Inlet, c.1888.

***MELISR:*** no specimens. ***References:*** A8C ('Parke, E. C., Mrs'); *Victorian Naturalist* (1889 **5:** 175).

**Parker, (Mrs R.),** fl. 1862, coll. N5W. Collected MEL specimens, Sydney.

***MELISR:*** no specimens. ***Mueller publicotions:*** B61.02.01.

**PARKINSON, E.** (Miss), fl. 1892, coll. Vic. Collected MEL specimens in the Wimmera, 1892.

***MELISR:*** 2 specimens. Miss E. Parkinson/ Miss Parkinson. ***References:*** ABC ('Parkinson, [E.], Miss').

**Paulson, (Mrs H.),** fl. 1863, coll. Vic. Probably Anne Paulson (c.1809 – 17 September 1866). Born in Popplewick, Nottinghamshire, England, to John Dawn, an accountant, and his wife Elizabeth. In 1831, Anne married John Paulson (d.1853), Mansfield, Nottinghamshire, England. They had one son, George William Paulson (b.c.1832). Anne and her son migrated to Victoria c.1858. They lived in Castlemaine where George William Paulson established a gingerbeer factory, although the business was declared insolvent in 1865. Anne collected MEL specimens (as 'Mrs H. Paulson'), Castlemaine, 1863. She also exhibited at the Victorian art exhibition, Melbourne, 1864, 'fruit and flowers, and a figure subject – aborigines preparing for a feast'. Anne died at her home in Castlemaine in 1866 aged 57.

***MELISR:*** no specimens. ***References:*** Pallot's marriage index for England, 1780–1837 (<ancestry.com.au>, viewed 2013); Vic. Death Certificate (1866/7640 Annie Paulson); *Argus* (21 December 1864: 1s, exhibition); *Argus* (8 June 1865: 2, insolvency). ***Mueller publications:*** B63.05.01 (specimens).

**PRIES, Amelia Matilda Richardson** (later Mrs Bunbury), 1863 – November 1956, coll. WA. Born in WA, the only daughter of a horse breeder, Robert Ferdinand Pries (1821–1905), and Matilda née Peek/Peck (1825–1911). Amelia grew up at 'Prospect Villa', Vasse, and collected MEL specimens at Geographe Bay, 1896. Her mother, Matilda Pries, father, Robert Ferdinand Pries, and brothers Arthur Robert Pries (1850–1908) and Edward Adolphus Pries (1852–1916) also collected MEL specimens. In 1897, Amelia married a settler Mervyn Corry Richardson Bunbury (1858–1910). They did not have any children. An aunt of Amelia's husband, Diana Richardson Bunbury, also collected MEL specimens. After her husband's death, Amelia bred race horses and won the Perth Derby in 1930. She died at Bunbury in 1956 aged 93.

***MELISR:*** 70 specimens. Miss A. Pries/ A.M. Pries/ Miss Pries. ***References:*** ABC ('Pries, Amelia Mildred/Matilda'); Rica Erickson notes (Willis papers, WILL001100, series 4, Box 1, RBG Melbourne); WA-8DM (viewed 2011); *West Australian* (30 January 1897: 4, marriage). ***Portroit:*** Amelia Bunbury, 1930, online image 050081PD, State Library of Western Australia (Appendix 1). ***Mop:*** Appendix 3.

**PRIES, Matilda** née Peek/Peck, 1825 – 17 October 1911, coll. WA. In 1860, Matilda migrated to WA with her husband Robert Ferdinand Pries (1821–1905), a horse breeder. The couple settled at 'Prospect Villa', Vasse, and had at least five children including Amelia Pries, Arthur Robert (1850–1908) and Edward Adolphus (1852–1916), who all collected MEL specimens. Matilda collected MEL specimens around Busselton, 1860s–1870s. Her husband also collected MEL specimens. Matilda died in WA in 1911 aged 86.

***MELISR:*** Many 'Pries' specimens, but no specific 'M. Pries' or 'Mrs Pries'. ***References:*** ABC ('Pries, Matilda'); WA-BDM (viewed 2011).

**RAWES, Emma Maria** (Miss), 20 June 1867 – 18 October 1974, coll. Vic. 8orn in Stanley, Vic., one of eight children, to Thomas Rawes (c.1835–1891) and Emma née Neville (c.1838–1828). The family settled at 'Raisgill', Nariel Creek, Upper Murray. Emma collected MEL specimens on the upper Murray River, 1888. Her brother, Gerard Rawes (1866–19S3) contributed nature notes to the newspaper. She did not marry, and died in 1974 in Corryong aged 107.

***MELISR:*** 58 specimens. Emma Rawes/ Miss Rawes. ***References:*** ABC ('Rawes, E., Miss [sometimes given as Rames]'); Indexes to Victorian BDMs, State Library of Victoria; 'Emma Maria Rawes' (<ancestry.com.au>, viewed 2013, death); *Advertiser*, Adelaide (27 July 1904: 6, brother Henry's marriage at Raisgill). *Argus* (4 May 1906: 7, brother Gerard nature notes). ***Map:*** Appendix 3.

**RENFREY, Elizabeth (Lizzie)** (Miss), fl. 1888, coll. Vic. Lizzie collected MEL specimens at Heywood, Heywood Hill, Mount Clay, Normanby, and near Portland Bay, 1888.

***MELISR:*** 40 specimens. Miss L. Renfrey. ***References:*** ABC ('Renfrey, L.'). ***Map:*** Appendix 3.

**RICHARDS, Anne (Annie) Frances** née Crafter, 14 August 1845 – 23 December 1930, coll. SA. 8orn in England, the eldest daughter of a chemist, Richard Crafter (1821–1910), and his wife Ann (c.1831–1904). The family migrated to SA when Annie was 8 years old. In 1867, Annie married Thomas Paul Richards (1842–1915), a police trooper at Fowler 8ay (who also collected MEL specimens). They did not have any children. The Richards lived at Fowler Bay (where Annie was the first white woman) until 1884, followed by postings at Port Augusta (1884–1887), Beltana, Teetulpa, Warrina (1887–1890), Port Pirie (1890), Georgetown (1891–1893), Jamestown (1894), Mount Barker (1899–1902) and Moonta (1902–1903). Annie collected (numbered) MEL specimens (including fungi) at Fowler 8ay, c.187S–1890; Euria/Eureo Rockhole and Pidinga, north of 'Point Bell', 1880; Port Lincoln, and between Port Lincoln and Streaky 8ay, 1882; Leigh Creek, north of Beltana, 1887; between Flinders Ranges and Lake Torrens, and at 'Port Augusta East', 1884–188S; Mount Ogilvie, 1889; 8eltana, Warrina, and 8linman, 1890; Georgetown, 1893; and upper Broughton River, 1894. She (or her husband) collected types of *Eucolyptus youngiono* F.Muell (1876) as 'Richardson', *Erysimum richardsii* F.Muell. (1877), *Parmelio hypoxontho* Müll.Arg. (1881), *Pormelio consperso* var. *polyphylloides* Müll.Arg. (1883), *Puccinio wurmbeoe* Cooke & Massee (1888), *Helipterum troedelii* F.Muell. (1890), as 'Mrs Richards', *Helipterum jessenii* F.Muell. (1890), *Bossia longicuspis* F.Muell. (1891), as 'Mrs Richards', and *Nicotiona goodspeedii* H.-M.Wheeler (1935), as 'Richards'. Annie also collected AD, BRI and NSW specimens. Annie died in 1930 in SA of senile decay. M gave Annie a copy of his *Select extro-tropicol plonts* (188S). Two letters from Annie to M survive.

***MELISR:*** 413 specimens. Mrs Annie Richards/ Mrs Ann Richards/ Mrs A.F. Richards/ A.F. Richards/ A. Richards/ Mrs Richards/ Mrs T.P. Richards. ***References:*** ABC ('Richards, Annie F.'); ADB ('Richards, Thomas Paul', viewed 2011); Henley-Smith, C. (2006). *Next Grovesend, next Mile End: The story of Richord Crofter 1821–1910, his oncestors ond descendonts*. Edwardstown, SA; *South Austrolion Register* (S March 1867: 2, marriage); *South Austrolion Register* (21 March 1903: 6, 'Presentation to Sgt. Richards'); *Advertiser* (2S July 1904: 4, mother's death); Cooke (18B8). ***Mueller Project letters:*** L86.03.04 to Deakin (book); L86.09.00, L90.09.00 from Richards. ***Portrait:*** Henley-Smith (2006: 37, 39). ***Handwriting:*** RB M5S M1, RBG Melbourne (Appendix 2). ***Map:*** Appendix 3.

**ROBINSON, (Miss)**, fl. 1894–1899, coll. Vic. Probably Adelaide Victoria Robinson (1884–1963). 8orn at Wangaratta, Vic., the eldest daughter of a teacher, Thomas Alfred Robinson (1852–1943), and Clara Eliza Alberta née Paten. In c.1890, the family moved to Dutson about 20 km east of Sale where Adelaide's father established a house and experimental garden, and commercial lime pit at 'Armidale' while he taught at the Stradbroke and then Dutson schools. Adelaide probably collected MEL specimens (as 'Miss Robinson') at Sale, and near Sale, 1894–1899. Her father also collected MEL specimens. In 191S, the family's lime business was declared insolvent due to the war, drought and pressure of creditors. Adelaide did not marry and died in 1963 aged 69.

***MELISR:*** 6 specimens. Miss Robinson. [NB Adelaide had three younger sisters, Clara Gertrude Robinson (b.1887), Hannah Alyssa Robinson (b.1890) and Emma May Robinson (b.1B93), who may also have collected MEL specimens, but would have only been seven, four and one respectively in 1B94 when 'Miss Robinson' collected her first specimen. It was also the convention in the 19th century for the eldest unmarried daughter to be known as 'Miss' without any initials.] ***References:*** ABC ('Robinson, Thomas Alfred'); Indexes to Victorian BDM records, State Library of Victoria; *Gippsland Times* (8 April 1915: 3, insolvency); *Gippslond Times* (29 April 1943: 1, father's obituary). ***Map:*** Appendix 3.

**ROPER, A.** (Miss), fl. 1889, coll. Tas. Collected a MEL specimen (bryophyte) at Tunnack, 1889.

***MELISR:*** 1 specimen. Miss A. Roper. ***References:*** ABC ('Roper, A., Miss'). ***Map:*** Appendix 3.

**ROSS, Mary** née Keyes, c.1840–1872, coll. Qld. 8orn in Ireland, one of a large number of children, to Richard Keyes (c.1797–1862) and Sarah née Saunders (c.1808–1870). The family

migrated to NSW, and settled at 'Waddon' and 'Pemberton' estates, Parramatta. In 1860, Mary married Eric Sutherland Ross (1832–1910) of 'Redbank', 'Rocky Bar', 'Crackow' and 'Dyngie' stations, Qld, and they had six children. Mary (mistakenly given as 'Miss Mary Ross') collected MEL specimens at 'Dyngie Station', 1866–1867. Mary's husband collected specimens for William Woolls. After catching a fever, Mary died at a family residence in Roma, Qld, aged 32.

***MELISR:*** 38 specimens: Miss Mary Ross. ***References:*** A8C ('Ross, M./E.'); *Argus* (4 May 1867: 5, donation to MEL by 'Miss Mary Ross, Dyngie'); Qld-BDM (viewed 2011); NSW-BDM (viewed 2011 [N8 there are no alternative identifications for Miss Mary Ross]); Woolls, W. (1866). Plants from the Dawson and the Darling Downs. *Sydney Morning Herold*, 16 May: 2; *Brisbone Courier* (3 August 1910: 7, husband's death); *Sydney Morning Herold* (8 November 1930: 7, obituary for aunt Sarah Keyes); *Brisbone Courier* (29 November 1872: 1, death). ***Mueller publicatians:*** 869.07.03 ('Miss M. Ross, Dingy, NSW'). ***Map:*** Appendix 3.

**ROWAN, Marian *Ellis* née Ryan**, 30 July 1848 – 4 October 1922, coll. NSW, Vic., WA, Qld. Born in Melbourne, the first child of a pastoralist, Charles Ryan, and Marian née Cotton. Ellis was a self-taught wildflower artist. In 1873, she married a British army officer, Frederic Charles Rowan (1844–1892), and they had one son. The Rowans lived in New Zealand, 1873–1877, then returned to Vic. where Frederic Rowan took up a business career. Ellis exhibited her art in international exhibitions and won the highest award at the Melbourne Centennial International Exhibition, 1888. After her husband's death in 1892, she travelled widely in Australia and overseas and published *Flower hunter in Qld and NZ* (1898). Ellis collected MEL specimens in NSW, 1880; in Vic. near Lake Hindmarsh, 1886, 1888; in Qld, 1887; Cape York, Cooktown, Jervis Island and Somerset, 1891; Thursday Island, 1892; and, in WA, at Perth, 1889. Ellis died at Macedon in Vic. in 1922 in her 74th year. Four letters survive from M to Ellis, and one from Ellis to M.

***MELISR:*** 36 specimens. Mrs Capt Rowan/ Mrs Rowan/ Rowan. ***References:*** ABC ('Rowan, Marian Ellis'); ADB ('Rowan, Marian Ellis'). ***Mueller Project letters:*** L95.12.01, L95.12.02, L95.12.03, L96.03.03 to Rowan; L90.03.23 from Rowan. ***Portrait:*** Wikimedia Commons (Appendix 1). ***Handwriting:*** RB MSS M1, RBG Melbourne (Appendix 2). ***Map:*** Appendix 3.

**RYAN, (Miss)**, coll. WA. Probably Kathleen Emily Margaret Ryan (1890–1970). Born in Perth, WA, the eldest of seven children, to Michael Ryan, a post and telegraph master, and Clara Oakley Ryan née Graham (1866–1945). Aged six, Kathleen probably collected MEL specimens (as 'Miss Ryan') at Eucla, 1896. Her mother Clara Ryan also collected MEL specimens. Kathleen did not marry and died in Perth in 1970 aged 80.

***MELISR:*** 5 specimens: Miss Ryan. [N8 Kathleen's sister Eileen Mary Ryan (b.1892) may also have collected specimens as 'Miss Ryan' in 1896 aged 4.] ***References:*** WA-BDM (viewed 2011). ***Map:*** Appendix 3.

**RYAN, Clara Oakley née Graham**, 1866–1945, coll. WA. Born in SA, one of ten children, to a postmaster, William H. Graham (1842–1912), and his wife Emily (c.1840–1916). The family settled at Kadina, 1869–1875, before moving to WA where Clara's father became the telegraph station master at Eyre's Patch. In 1889, Clara married Michael Ryan, post and telegraph master at Ashburton, and they had seven children. Clara's husband was the master of the post and telegraph office at Israelite Bay, 1890–1895, and at Eucla, 1895–1907. Clara collected MEL specimens at Eucla, 1895–1896. One of her daughters (see Miss Ryan) also collected MEL specimens. In 1945, Clara died in WA aged 79. Seven letters from M to Clara survive.

***MELISR:*** 69 specimens. Mrs C.O. Ryan/ C.O. Ryan/ C. Ryan/ Ryan/ C. O'Ryan. ***References:*** ABC ('Ryan, Clara Oakley'); WA-BDM (viewed 2011); *South Austrolion Register* (19 July 1889: 4, marriage); *Sundoy Times* (2 July 1911: 21, father's death); *Western Mail* (2 June 1916: 12, mother's death). ***Mueller Project letters:*** L95.08.29, L96.01.07, L96.02.02, L96.02.02, L96.08.07, L96.09.15, L96.09.20 to Ryan. ***Map:*** Appendix 3.

**RYLAND, Annie Eliza (Miss)**, c.1850–1934, coll. Vic. Born in London, one of at least six children, to James Herman Ryland and Annie née Livingstone. The family migrated to Victoria and took up farming at Minyip. Annie responded to a call for collectors placed by M in the *Leader*, and collected (numbered) MEL specimens at Minyip, 1879. Annie's father also collected MEL specimens. In 1897, Annie married Charles Walliss. She died in Minyip in 1934 aged 84. One letter from Annie to M survives.

***MELISR:*** 1 specimen. Miss Ryland. ***References:*** Indexes to Victorian BDM records, State Library of Victoria. ***Mueller Project letters:*** L79.10.30 to Mueller. ***Handwriting:*** MEL 0057643A (Appendix 2). ***Map:*** Appendix 3.

**SALMON, (Miss)**, fl. 1869, coll. SA. Collected MEL specimens at northern Yorke Peninsula, 1869

***MELISR:*** 86 specimens. Miss Salmon. ***References:*** A8C ('Salmon, Miss'). ***Mop:*** Appendix 3.

**SCOTT, Harriet (later Mrs Morgan)**, 22 March 1830 – 16 August 1907, coll. NSW, Qld. Born in Sydney, the first of two children, to settlers Alexander Walker Scott (1800–1883) and Harriet née Calcott (1829–1866). The family lived on

Ash Island, and Harriet and her sister Helena were educated at home in natural history by their father. Harriet and her sister (see Helena Scott) collected MEL specimens at Ash Island, 1862, n.d., and south of Newcastle, 1862. Harriet also collected MEL specimens in NSW at Watson Bay, 1881; Port Jackson, 1881, 1896, 1900; and Richmond River, 1889. She collected the type of *Dompiero scottiono* F.Muell. (1881), named for her, and either she or her sister, Helena, collected types of *Kochio sedifolio* F.Muell. (1855), *Cargillio pentomero* Woolls & F.Muell. (1864) and *Vincetoxicum elegons* Benth. (1868). In 1882, Harriet married Crosby William Morgan. They did not have any children. As 'H. Morgan', Harriet collected a MEL specimen at Wagga Wagga, n.d. Harriet and her sister, Helena, were natural history artists. Harriet died at Granville in 1907 aged 77. Two letters from Harriet to M survive.

***MELISR:*** 3 specimens. Harriet Scott/ Miss Scott/ Scott/ H. Morgan. [NB There are an additional 23 'Miss Scott' specimens that could have been collected by either Harriet or Helena.] ***References:*** ABC ('Scott, Harriet'); ADB (Alexander Walker Scott", viewed 2011). ***Mueller publicatians:*** B81.08.03 (eponymy). ***Mueller Project letters:*** L81.08.15, L90.00.00 from Scott. ***Handwriting:*** RB MSS M1, RBG Melbourne (Appendix 2). ***Map:*** Appendix 3.

**SCOTT, Helena** (later Mrs Forde), 11 April 1832 – 24 November 1910, coll. NSW. Born in Sydney, the second of two children, to settlers Alexander Walker Scott (1800–1883) and Harriet née Calcott (1829–1866). The family lived on Ash Island, and Helena and her sister Harriet were educated at home in natural history by their father. Helena and her sister (see Harriet Scott) collected MEL specimens at Ash Island, 1862, n.d., and south of Newcastle, 1862. In 1864, Helena married the surveyor Edward Forde (d.1866), and travelled with him. They did not have any children. Helena collected MEL specimens (as 'Mrs Forde') in NSW at the Darling River, 1865, 1878; Lower Darling River, 1866; and Darling Downs, Hunter River, Newcastle and Wentworth, n.d.; and in SA at Blanchetown and Murray Bridge, 1865. Her husband also collected MEL specimens. Helena collected types of *Atriplex stipitota* Benth. (1870) and *Poo fordeono* F.Muell. (1873), named for her. Either Helena or her sister, Harriet, collected types of *Kochio sedifolio* F.Muell. (1855), *Corgillio pentomera* Woolls & F.Muell. (1864) and *Vincetoxicum elegons* Benth. (1868). A possible syntype of *Hypopterigium scottioe* Müll. Hall (1868), collected by and named for Helena, has been labelled as being collected at Brisbane River, but the locality has probably been confused with that of another syntype for the same name collected by Amalia Dietrich. There are also Helena Scott (as 'Helen Scott') specimens at B. Helena and her sister, Harriet, were natural history artists. Helena died in 1910 aged 78.

***MELISR:*** 300 specimens. Helena Scott/ Miss Scott/ H. Forde/ Mrs Forde/ Forde/ H. Ford/ Mrs Ford/ Ford. NB There are an additional 23 'Miss Scott' specimens that could have been collected by either Harriet or Helena.] ***References:*** ABC ('Scott, Helena', 'Forde, Edward'); ADB ('Alexander Walker Scott', viewed 2011); MEL 1000799A (specimen labelled 'Brisbane River'). ***Mueller publicatians:*** B73.12.01, B69.07.03 (eponymy). ***Mueller Project letters:*** L81.05.26 to Forde. ***Partrait:*** Wikimedia Commons (Appendix 1). ***Map:*** Appendix 3..

**SEWELL, Geraldine Allen** (Miss), 1861 – June 1900, coll. WA. Born in WA, the first of nine children, to settlers Frederick Sewell (c.1828–1888) and Charlotte Matilda née Shepherd (c.1842–1924). The family lived at Mount Caroline, near York. Geraldine collected MEL specimens at Mount Caroline, 1886, 1889, 1891; Murchison River, 1890, 1891; and 'Spring Valley', 1890. She collected the type of *Tetrotheca deltoidea* Joy Thomps. (1976). Geraldine's sister Maud Amy Sewell, and cousin Julia Sewell also collected MEL specimens. Either Geraldine, Julia or Maud Sewell collected the type of *Aizoon globrum* Leuhm. ex Ewart (1908). Geraldine did not marry and died at Cue in 1900 aged 39.

***MELISR:*** 313 specimens. Miss Geraldine Sewell/ Miss Ger. Sewell/ Miss G.A. Sewell/ Mrs G.A. Sewell/ G. Sewell/ Miss Sewell. [NB There are an additional 534 'Miss Sewell' specimens that could have been collected by Geraldine, Julia or Maud.] ***References:*** ABC ('Sewell, Geraldine'); WA-BDM (viewed 2011). ***Map:*** Appendix 3.

**SEWELL, Julia** (Miss), c.1847–1914, coll. WA. Born, one of four children, to George Sewell (c.1817–1891) a farmer near Northam, WA, and Elizabeth née Logue (1822–1912). The family settled at Chittering Brook, then in 1868 established 'Sandsprings' sheep and cattle station near Champion Bay. In 1877, they returned to Chittering Brook. After her father's death, Julia and her mother lived near Midland Junction. Julia collected MEL specimens at Mount Caroline, 1882–1885, 1890; 'Spring Valley', 1883, 1890; Swan River, middle Swan and lower Swan River,. 1883, 1895; Chittering, 1889; and Bunbury and Geographe Bay, 1892. She collected types of *Hydrocotyle blephorocarpo* F.Muell. (1883) and *Elachonthera sewelliae* F.Muell. (1886), named for her. Julia's cousins Geraldine Allen Sewell and Maud Amy Sewell (mrs Skewes), and Kate French Logue also collected MEL specimens. Either Julia, Geraldine or Maud Sewell, collected the type of *Aizoon globrum* Leuhm. ex Ewart (1908). In 1887, Julia placed notices in the *West Australian* and *Western Mail* seeking information on M's behalf about the Gnarba

(or Narboola) plant. Julia did not marry and died in 1914 at Gilga, Middle Swan aged 67. One letter from Julia to M survives.

***MELISR:*** 10S3 specimens. Miss Julia Sewell/ Miss Jul. Sewell/ Miss J. Sewell/ J. Sewell/ Miss Sewell. [NB There are an additional S34 'Miss Sewell' specimens that could have been collected by Geraldine, Julia or Maud.] ***References:*** ABC ('Sewell, Julia'); WA-BDM (viewed 2011); *West Australian* (1 March 1BB7: 3, notice); *West Australian* (26 February 1912: 4, mother's death); *West Australian* (23 November 1914: 1, death). ***Mueller publicatians:*** BB6.12.02 (eponymy). ***Mueller Project letters:*** L83.11.16 from Edward Forrest; L86.11.07 from Sewell. ***Handwriting:*** RB MSS M1, RBG Melbourne (Appendix 2). ***Map:*** Appendix 3.

**SEWELL, Maud Amy** (later Mrs Skewes), 1875–1955, coll. WA. Born in WA, the seventh of nine children, to settlers Frederick Sewell (c.1828–1888) and Charlotte Matilda née Shepherd (c.1842–1924). The family lived at Mount Caroline, near York. Maud collected MEL specimens at Mount Caroline, 1892. Maud's sister, Geraldine Allen Sewell, and cousin Julia Sewell also collected MEL specimens. Either Maud, Geraldine or Julia Sewell, collected the type of *Aizoon glabrum* Leuhm. ex Ewart (1908). In 1911, Maud married John Foster Skewes (c.1861–1938), a farmer at Mount Stirling. They do not seem to have had any children. Maud died in Perth in 1955 aged 80.

***MELISR:*** 20 specimens. Miss Maud Sewell/ Miss M. Sewell/ Miss Sewell. [NB There are an additional S34 'Miss Sewell' specimens that could have been collected by Geraldine, Julia or Maud.] ***References:*** ABC ('Sewell, Maud Amy'); WA-BDM (viewed 2011); *West Australian* (24 January 1911: 1, marriage); *West Australian* (3 June 193B: 14, husband's death). ***Map:*** Appendix 3.

**SIM, A.** (Miss), fl. 1894–1896, coll. Vic. Collected MEL specimens (weeds) at the Loddon River, 1894, 1896.

***MELISR:*** 3 specimens. Miss Sim/ A. Sim. ***References:*** ABC ('Sim, A., Miss'). ***Map:*** Appendix 3.

**SLATTER, Eliza** née Wimston, c.1829 – 15 October 1895, coll. Qld. Born in England to an artist, James Wimston, and Ann née Brickwell. In c.1858, Eliza married James Slatter, in Christchurch, Middlesex, and they had two children. The Slatters migrated to Qld where Eliza's husband was a builder and contractor at Copperfield, and a member of the Qld Acclimatisation Society. Eliza collected MEL specimens at Copperfield, near Clermont, 1869–1871. In 1881, Eliza's husband was declared insolvent. In 1895, Eliza died at Clermont of dysentery aged 66.

***MELISR:*** 119 specimens. Eliza Slatter/ Eliz. Slatter/ Mrs Slatter. ***References:*** ABC ('Slatter, E. (many give Mrs)'); Qld-BDM (viewed 2013); Qld Death Certificate (1895/782 1779 Eliza Slatter, Clermont, 15 October 1B95); *Brisbone Courier* (16 September 1872: 2, Acclimatisation Society); *Brisbone Courier* (29 June 18B1: 4, insolvency); *Brisbone Courier* (17 March 1B96, Eliza's will). ***Map:*** Appendix 3.

**SMITH, (Miss),** fl. 1882, 1885, WA. Collected MEL specimens near York, 1882, and Beverley, 1885.

***MELISR:*** 6 specimens. Miss Smith. ***References:*** ABC ('Smith, (D?), Miss'). ***Map:*** Appendix 3.

**SMITH, J.** (Miss), fl. 1896, coll. Vic./N5W/5A. Collected a MEL specimen near the Murray River, 1896.

***MELISR:*** 1 specimen. Miss J. Smith. ***References:*** MEL label (RB MSS 229a), RBG Melbourne.

**SMITH, Winifred (Winnie) Jane** (Miss), 1876 – 24 December 1951, Vic. Born in Casterton Vic., one of twelve children, to Samuel Smith (c.1834–1897) and Ann Elizabeth née Sutton (d.1898). The family settled on the grazing property 'Moira Park', Yielima. Winnie collected MEL specimens at Murray River, 1892, and 'Moira Park', Yielima, 1895. Winnie trained and worked as a nurse in Melbourne. In 1915, she joined the Australian Army Nursing Service, and served in England during the First World War. She was discharged from the Service on her marriage to a Mr Watson in 1917. Winnie died in 1951 in her 75th year.

***MELISR:*** 7 specimens. Miss Winnie Smith/ Miss W.J. Smith/ W.J. Smith. ***References:*** Indexes to Victorian BDM records, State Library of Victoria; National Archives of Australia, B245S, Smith, W. J.; *Australasian* (4 September 1B97: S1, death of father); *Argus* (26 February 189B: 1, death of mother); *Numurkah Leader* (27 July 1917: 2). ***Map:*** Appendix 3.

**SPENCER, Jessie** née Hubbard, 1859–1936, coll. Qld. Born in Dubbo, NSW, apparently the eldest of six children, to Daniel Hubbard (d.1895) and Mary Anne née Ward. The family moved to Bourke around 1864. In 1876, Jessie married a drover and station manager, Charles George Spencer (1846–1910), in Bourke. The Spencer family was involved in pastoral and associated industries around Roma in Qld, and Barraba in N5W. Jessie and Charles had at least seven children in various NSW and Qld locations, suggesting a peripatetic life. Jessie collected MEL specimens (as 'Mrs C.G. Spencer') at Thargomindah, 1B84–1885; and Albany Downs, Cunnamulla, 'Elmina Station', Eulo, Roma, Southport, and west of Thargomindah between the Bulloo and Paroo Rivers, 1885. She collected the type of *Sida spenceriana* F.Muell. (1885), which was named for her (as 'Mrs F. Spencer'). Jessie's husband may also have collected

MEL specimens (as 'C.G. Spencer'). Adolph Wuerfel, an orchardist at Dubbo, (who also collected for M) probably forwarded Jessie's specimens to M. Jessie died in Qld in 1936 in her 77th year.

***MELISR:*** 266 specimens. J. Spencer/ Mrs C.G. Spencer/ Mrs Spencer/ Mrs F. Spencer/ Mrs C.G. Spence/ Spencer. ***References:*** A8C ('Spencer, G.L., Mrs'); Qld-8DM (viewed 2013); NSW-BDM (viewed 2013); Qld Birth Certificate (1883/7784 Susan Leslie Spencer, Nocatunga Station, 6 April 1883); Qld Birth Certificate (1885/9122 Walter Gordon Spencer, Ardoch, 26 April 1885); Qld 8irth Certificate (1888/1948 Norman Russell Spencer, Armadilla, 31 May 1888); *8risbone Courier* (2 June 1887: 7); *Brisbone Courier* (7 January 1901: 8, husband a drover); *Western Stor & Romo Advertiser* (5 June 1886: 4, husband manager of 'Albany Downs Station'); McManus, M.A. (1913). *Reminiscences of the eorly settlement in the Moronoa district.* 8risbane; 8iographical files RBG Melbourne (undated newspaper clipping re 'Mrs G.L. Spencer', Thargomindah, & Wuerfel). ***Mueller publications:*** 885.04.02 (eponymy). ***Handwriting:*** MEL 0071858A (Appendix 2). ***Map:*** Appendix 3.

**SPONG, Mary** née Lawrence, c.1834 – 2 November 1891, coll. Tas. Born, the eldest daughter of William Lawrence of 'Kirkby House', 'Bruni'. In 1860, Mary married a master mariner, Edward Nash Spong (1818–1907), and they had at least five children. The Spongs lived at Cape Wickham, King Island between 1861/1862–1882 where Mary's husband was lighthouse keeper. Mary collected MEL specimens at King Island, 1881. Her husband also collected MEL specimens. Mary died in her 57th year in 1891 leaving £10 to her husband.

***MELISR:*** 15 specimens. Mrs Spong. ***References:*** A8C ('Spong, Edward Nash'); Indexes to Tasmanian BDMs, State Library of Victoria; *Lounceston Exominer* (12 June 1860: 6, marriage); *Lounceston Exominer* (22 December 1891: 2, probate). ***Map:*** Appendix 3.

**STEWART, (Mrs)**, fl. c.1880s, coll. Vic. Collected MEL specimens at St Arnaud, n.d.

***MELISR:*** 24 specimens. Mrs Stewart/ Mrs Stuart. ***References:*** MEL label c.1880s (R8 MSS 229a), R8G Melbourne. ***Map:*** Appendix 3.

**STIRLING, (Miss)**, fl. 1884, coll. WA. Collected a MEL specimen in WA, 1894.

***MELISR:*** 1 specimen. Miss Stirling.

**STIRLING, Amy Livingstone** (later Mrs Harrison), 25 February 1880 – 1945, coll. Vic. Born in Omeo, Vic., one of six children, to a surveyor James Stirling (1852–1909), and Elizabeth née Reid (1855–95). Amy collected MEL specimens in South Gippsland (ferns), 1893; and at San Remo and Phillip Island, n.d. Her father also collected MEL specimens. In 1905, Amy married Ernest Harrison, an employee of the commonwealth Railways. She died in Canada in 1945 in her 65th year. Two letters from M to Stirling survive.

***MELISR:*** 94 specimens. A.L. Stirling/ Miss Stirling. ***References:*** ABC ('Stirling, Amy Livingstone', 'Stirling, James'); Stirling, A.L. (1980). *Memories of on Austrolion childhaad 1880–1900.* Linda Harrison & Robin Hall (intro.). Schwartz, East Melbourne. ***Mueller Project letters:*** L90.00.00, L92.11.15 to Stirling. ***Portrait:*** Stirling (1980). ***Map:*** Appendix 3.

**SUTTON, M.** (Miss), fl. 1896, coll. WA. Probably Margaret Ann Sutton (d.1947). Born in England, one of at least five children, to settlers John Sutton (c.1839–1915) and his wife Betsy (d.1920). The family migrated to WA and established Wingate Apiary near Waroona (originally known as Drakesbrook). Margaret (as 'Miss M. Sutton') collected MEL specimens at Drakesbrook, 1896. In 1901, she married Eustace Gordon Welch at Hamel, and they had at least one child. Margaret died in 1947 in Perth.

***MELISR:*** 39 specimens. Miss M. Sutton. ***References:*** A8C ('Sutton, M., Miss'); WA-8DM (viewed 2013); *Western Moil* (19 June 1909: 40, parents' golden wedding anniversary). ***Map:*** Appendix 3.

**TAYLOR, (Miss)**, fl. 1890, coll. NSW. Collected MEL specimens on the Upper Darling River, 1890.

***MELISR:*** 7 specimens. E.A. Taylor/ E. Taylor/ Miss Taylor. ***References:*** A8C ('Taylor, Ellen H.'). ***Mop:*** Appendix 3.

**TAYLOR, Catherine (Kate) Louisa** (Miss), 1839 – 3 May 1913, coll. WA. Born in Albany, WA, second daughter to settlers Patrick Taylor (d.1877) and Mary Yates née Bussell (d.1887). Kate collected MEL specimens at King George Sound, 1879, 1880. Kate's brother, Campbell Taylor (1842–1900), and her sister-in-law Charlotte Taylor née Gresham also collected MEL specimens. Kate did not marry, and died in Cottesloe in 1913 in her 74th year. One letter from Kate to M survives.

***MELISR:*** 4 specimens. Miss Taylor. ***References:*** A8C ('Taylor, Catherine [Kate]', 'Taylor, Campbell'); WA-BDM (viewed 2013); *West Australian* (5 May 1913: 1, death); *Doily News* (9 May 1913: 4, funeral); *Sundoy Times* (8 June 1913: 5s, ill). ***Mueller Project letters:*** L80.04.27 from Taylor. ***Handwriting:*** R8 MSS M1, R8G Melbourne (Appendix 2). ***Map:*** Appendix 3.

**TAYLOR, Charlotte** née Gresham, 1862 – 15 December 1944, coll. WA. Born in Melbourne, one of at least eight children, to a merchant, William Hutchinson Gresham (1824–1875), and Jane Dickson Maxwell née Ingles (1830–1875). Charlotte trained as an artist at the National Gallery of Victoria. After her father's sudden death in 1875, a relief fund bought the destitute family a house. About 1880,

Charlotte and her sister Jessie Adams Gresham (c.1868–1902) moved to Albany, WA, where they set up a boarding school (Plantagenet College) for young ladies with delicate constitutions. It closed by 1882. In 1883, Charlotte married Campbell Taylor (1842–1900), of 'Lynburn' and 'Thomas River' stations. They did not have any children. Charlotte collected MEL specimens near Thomas River, 1887. Her husband, and sister-in-law Catherine (Kate) Louisa Taylor, also collected MEL specimens. After her husband's death in 1900, Charlotte established herself as an art teacher in Perth, but went to Paris in 1906 to study at Julien's studio. She died at the Burwood Private Hospital in Melbourne in 1944 aged 84.

***MELISR:*** 4 specimens. Mrs C. Taylor. ***References:*** A8C ('Taylor, Charlotte'); ADB ('W.H. Gresham', viewed 2011); Indexes to Victorian BDM records, State Library of Victoria; WA-BDM (viewed 2011); *Argus* (17 September 1875: 1, mother's death); *Argus* (18 December 1944: 2, death); *West Australian* (26 October 1880: 2); *West Australian* (25 February 1881: 2, arrivals in Albany of Miss Greshams); *West Australian* (22 April 1881: 3, school); *West Australian* (6 December 1881: 2, school); *West Australian* (2 August 1900: 4, buggy accident); *West Australian* (3 January 1903: 40, art teacher); *West Australian* (31 October 1906: 4, Paris). ***Map:*** Appendix 3.

**TAYLOR, Mary Anne** née Forde, c.1849 – 11 July 1920, coll. Tas. In 1874, Mary married Alfred Joseph Taylor (1849–1921), a librarian and publicist. They had one stillborn child. Mary Anne collected a MEL specimen at Lake Pedder, 1890. Her husband also collected MEL specimens. Mary died in 1920 aged 71.

***MELISR:*** 1 specimen. Mrs Taylor. ***References:*** ABC ('Taylor, Alfred Joseph'); ADB ('Taylor, Alfred Joseph', viewed 2013); Indexes to Tasmanian BDMs, State Library of Victoria; *Mercury* (13 July 1920: 1, death).

**TEPPER, Isabella (Belle) Wilhelmina Victoria** (later Mrs Cowan), 28 October 1870 – 17 April 1966, coll. NSW. Born at Neu Mecklenburg, SA, one of three children, to Johann Gottlieb Otto Tepper (1841–1923) and Jane née Brock (b.1847). Belle's father was a teacher and natural history collector, who corresponded with M and collected MEL specimens. Educated by her father, Belle began collecting and drawing natural history specimens as a teenager, and trained as an artist at the South Australian School of Art. Belle's parents divorced in 1881, and the children seem to have stayed with their father. Belle collected MEL specimens in NSW (as 'Miss Tepper') on the road to Broken Hill, at 'Culpaulin Station', Darling River, 'Kinchega Station', and Wilcannia, June–August 1893. Her brother, J.W. Otto Tepper, also collected specimens. In 1895, Belle married William Lachlan Cowan (d.1912), a stock dealer and miner, who was absent for long periods from home. They did not have any children. Belle died in 1966 at her home in Kensington, Adelaide, aged 95.

***MELISR:*** 65 specimens. Miss Tepper. ***References:*** ABC ('Tepper, Miss', 'Tepper, Johann, Gottlieb Otto', 'Tepper, J.W. Otto'); Martin, R. (ed.) (1986). *Tepper family history*. Adelaide; 'South Australian School of Art' (<w3.unisa.edu.au/artarchitecturedesign/about/history.asp#SASA>, viewed 2013); *South Australian* (23 July 1881: 22, divorce); *South Australian Register* (12 November 1886: 7, museum donation); *South Australian Register* (7 August 1893: 3, SA Gardeners' Society reference to Darling River specimens); *South Australian Register* (6 September 1893: 6, Royal Society SA reference to Darling River specimens); *South Australian Advertiser* (26 August 1891: 7, art work); *Chronicle*, Adelaide (14 December 1895: 8, marriage). ***Mueller Project letters:*** L93.08.26, L94.09.29 to J.G.O. Tepper. ***Portrait:*** Martin (1986). ***Map:*** Appendix 3.

**THORNTON, Edith** (Miss), 1860–1909, coll. NSW. Born at the Macleay River, NSW, one of at least three children, to Capt. William Henry Thornton (c.1818–1903), district registrar and coroner, and his wife Rebecca Avis (d.1864). Edith's father had an experimental garden at Kempsey where he grew cotton, arrowroot, pineapples, bananas and coffee. In the late 1880s, Edith became a pioneering settler in the Coramba district, as did her sister, Annie (c.1853–1910), and brother-in-law, Eugene F. Rudder (d.1931). Edith collected MEL specimens (including mosses and lichens) at Coramba and Clarence River, 1883–1884; Bellinger River, Bellingen Range and Orara, 1885; and Richmond River, 1891. She retired to Eastern Creek, and died at Thirlmere in 1909 at the age of 49. She did not marry. Two letters from Edith to M survive.

***MELISR:*** 36 specimens. E. Thornton/ Miss Thornton/ Miss Thorneton/ Thorneton. ***References:*** ABC ('Thornton, Edith'); NSW-BDM (viewed 2011); *Sydney Morning Herold* (12 September 1861: 2, father's garden); *Sydney Morning Herold* (29 March 1864: 1, mother's death); *Sydney Morning Herald* (28 March 1903: 8, father's death); *Clorence & Richmond Examiner* (15 May 1909: 2, death). ***Mueller Project letters:*** L84.04.07, L84.08.08 from Thornton. ***Handwriting:*** RB MSS M1, RBG Melbourne (Appendix 2). ***Map:*** Appendix 3.

**THOZET, Maria Isabella** (Mrs), c.1836 – 4 August 1923, coll. Qld. Born, in Mauritius. Married Anthelme Thozet (c.1826–1878), a settler and horticulturist, and they had a son. The Thozets moved to Sydney around 1851. After the Canoona gold rush in 1858, they settled in North Rockhampton, Qld, and established an extensive experimental garden at Kalka called 'Muellerville'. Maria collected MEL specimens (including fungi and algae) at Rockhampton, 1881. She collected types of *Arthonia delicatula* Müll.Arg. (1882), *Arthonia thozetiana* Müll.Arg. (1882) named for her, *Agaricus*

*rhytipelto* F.Muell. (1882), and *Ramolino farinacea* var. *squarroso* Müll.Arg. (1883). Jean Müller identified Maria's algal specimens for M. Maria's husband also collected MEL specimens. M gave her a copy of his *Select extro-tropicol plonts* (1885). Maria died in 1923 at the General Hospital, Rockhampton, aged 87.

***MELISR:*** 16 specimens. Mrs Thozet. ***References:*** A8C ('Thozet, Mrs', 'Thozet, Anthelme'); *Morning Bulletin* (6 August 1923: 6, obituary); *Queenslander* (8 June 1878: 302, obituary husband); *Capricarnian* (8 June 187B: 12, obituary husband); Kalchbrenner, C. (1882). Definitions of same new Australian fungi. *Prac. Linn. Soc. NSW* **7**, 104. ***Mueller Project letters:*** L86.03.04 to Deakin (boak). ***Map:*** Appendix 3.

**TOLL, Florence Kate** (later Mrs Sullivan), 1869–1950, coll. WA. Born in Albany, WA, one of at least four children, to Capt. Henry Knighton Toll, of the P. & O. Company, and Ann née Reynolds. Florence's father also worked for the Port of Albany, was lighthouse keeper at 8reaksea, and ran 'Warrungup' sheep station north of the 5tirling Range, before returning to England. Florence collected MEL specimens at 'Warrungup', 5tirling Range, 1883–1885. In 1890, she married James John 5ullivan (c.1860–1948), and they had six children. She died in 1950 in WA aged 81.

***MELISR:*** 30 specimens. Miss Flar. Tall/ F. Toll/ Miss Tall. ***References:*** ABC ('Tall, Florence Kate'); WA-BDM (viewed 2011); *West Australian* (B February 1B78: 2, P. & O. Company); *West Australian* (4 Navember 1884: 3, Warrungup); *West Australian* (20 August 1886: 3, lighthause); *West Australian* (16 June 1948: 1, husband's death). ***Map:*** Appendix 3.

**TRIMMER, Sophia Jane** (later Mrs Campbell), 1839–1890, coll. WA. Born, one of at least seven children, to settlers Arthur Trimmer (c.1806–1877) and Mary Ann née 5pencer (c.1815–1886). Sophia collected MEL specimens at King George 5ound, 1869. In 1871, 5ophia married Sir Alexander Thomas Cockburn Campbell (c.1804–1871), Government Resident of Albany. Sophia died in 1890 aged 49.

***MELISR:*** 22 specimens. 5ophia Trimmer/ Miss Trimmer. ***References:*** ABC ('Trimmer, S.'); *West Australian Times* (3 April 1877: 2, father's death); *West Australian* (26 August 18B6: 2); *Daily News* (10 September 1B86: 3, mather's death); *Western Mail* (13 September 1890: 13, obituary). ***Map:*** Appendix 3.

**TURNER, (Miss)**, fl. 1887, Vic. Collected MEL specimens at Serviceton, 1887.

***MELISR:*** 20 specimens. Miss Taylor. ***References:*** ABC ('Turner, A. K.'). ***Map:*** Appendix 3.

**URQUHART, (Miss)**, coll. NSW. Collected MEL specimens on the Darling River, 1889.

***MELISR:*** 56 specimens. Miss Urquhart. ***References:*** ABC ('Urquhart, Miss'). ***Map:*** Appendix 3.

**WAKLEY, (Mrs E.)**, coll. NSW. Collected MEL specimens at New England, 1889.

***MELISR:*** 4 specimens. Mrs E. Wakley/ E. Wakley. ***References:*** ABC ('Wakley, E., Mrs').

**WALKER, Anna (Annie) Frances** (Miss), 23 June 1830 – 5 January 1913, coll. NSW. Born at 'Rhodes', Concord, NSW, one of fourteen children, to Thomas Walker (1791–1861), Commissary and settler, and Ann Elizabeth née Blaxland (1804–1889). In 1832, the family moved to Tas. and built another 'Rhodes' near Longford. After the death of Annie's father in 1861, her remaining family moved back to 'Rhodes', N5W. Annie was a wildflower artist in Tas. and NSW, 1870–1910. In 1873, she received a gold medal and several certificates for paintings exhibited at the London Exhibition. With M's encouragement, she published *Flowers in New South Wales* (1887). Annie collected MEL specimens (mainly fungi) in the 8lue Mountains, 1892–1893; Paramatta River, 1893; and 'Rhodes', 1895. The mycologists Mordecai Cooke and George Massee identified Annie's fungal specimens for M. *Cortinorius walkeri* Cooke & Massee (1893) was named for her (as 'Miss A.P. Walker'). There are also Annie Walker (as 'Miss A.F. Walker') specimens at K. Annie died at 'Rhodes', N5W, in 1913, aged 82. She did not marry. Twenty-one letters from M to Annie survive.

***MELISR:*** 19 specimens. Miss A.F. Walker/ Miss A. Walker/ A.F. Walker/ A. Walker/ A.E. Walker. ***References:*** ABC ('Walker, Anna/ Annie Frances'); ADB ('Thamas Walker', viewed 2011); *Grevillea* (1893 **22**: 36); *Examiner* (14 January 1913: 5, death). ***Mueller Project letters:*** L81.08.09, L81.09.17, L89.10.09, L89.10.29, L90.03.15, L91.10.16, L91.11.20, L93.02.21, L93.03.22, L93.04.25, L93.05.02, L93.08.20, L93.08.25, L93.08.28, L94.06.22, L94.07.06, L95.05.27, L95.06.03, L95.06.21, L96.03.12, L96.04.17 from M; L94.03.22 to Ward-Cale; L81.09.09, L91.10.16 Graener to Walker. ***Map:*** Appendix 3.

**WALKER, (Mrs H.)**, fl. 1890, coll. Qld. Collected MEL specimens at Jericho 2 and upper Barcoo, 1890.

***MELISR:*** 23 specimens. Mrs H. Walker. ***References:*** ABC ('Walker, A./A.F./H.'). ***Map:*** Appendix 3.

**WALKER, (Mrs L.C.)**, fl. 1893, coll. Qld. Collected MEL specimens at Barcoo, 1893.

***MELISR:*** 2 specimens: Mrs L.C. Walker. ***References:*** A8C ('Walker, L.C., Mrs').

**WALKER, (Mrs M.L.)**, fl. 1894, coll. Qld. Collected a MEL specimen at Dunrobin, 1894.

***MELISR:*** 1 specimen: Mrs M.L. Walker. ***References:*** A8C ('Walker, Mary, Miss'). ***Map:*** Appendix 3.

**WALKER, Mary** (Miss), fl. 1890, coll. Qld. Collected MEL specimens at the Barcoo, upper Barcoo, Dunrobin and Jericho, 1890.

***MELISR:*** 22 specimens. Miss Mary Walker/ Miss M. Walker/ Miss Walker. [NB There are an additional 37 specimens from the Alice River and Jericho, 1890, and Barcoo, 1890, 1893, attributed to 'M. Walker', which were probably collected by either Miss Walker or Mrs Mary Walker.] ***References:*** A8C ('Walker, Mary, Miss'). ***Map:*** Appendix 3.

**WALKER, Mary** (Mrs), fl. 1894, coll. Qld. Probably Mary Elizabeth Walker formerly Lightbody née Blaxland (1848–1920). Born the oldest daughter of Charles and Elizabeth Blaxland of NSW. In 1875, Mary married Charles John Lightbody (d.1884) of 'Toowondin Station', Qld. They had at least two children. In 1889, Mary married Arthur George Walker (1828–1894) of 'Dunrobin Station', Jericho, Qld. Mary probably collected a MEL specimen (as 'Mrs Mary Walker') at Dunrobin, 1894. She died in Qld in 1920.

***MELISR:*** 1 specimen. Mrs Mary Walker. [NB There are an additional 37 specimens from the Alice River and Jericho, 1890, and Barcoo, 1890, 1893, attributed to 'M. Walker', which were probably collected by either Miss Walker or Mrs Mary Walker.] ***References:*** Qld-BDM (viewed 2013); *Queenslander* (29 June 1889: 1209, marriage to Walker). ***Map:*** Appendix 3.

**WARBURTON, Mary Egerton** (later Mrs Rogers), 1851–1930, coll. WA. Born in WA, one of six children to George Edward Egerton Warburton (1819–1889), a soldier and settler, and Augusta Spencer. The family ran 'St Werburgh's Estate' on the Hay River. Mary collected MEL specimens on the upper Hay River, 1870–1873, including types of *Hypoxis occidentalis* Benth. (1873), *Hypoxis leptantha* Benth. (1873), *Pterostylis recurva* Benth. (1873), *Xerotes purpurea* var. *capitata* Benth. (1878), and *Gahnia aristata* Benth. (1878). Mary's uncle, Peter Egerton Warburton (1813–1889), cousin Richard Egerton Warburton (1840–1917), and niece Winifred Egerton Warburton, also collected MEL specimens. Mary married Dr Cecil Rogers (1838–1914), a medical officer at Albany. They did not have any children. Mary and her husband left WA in 1887. They lived in Ashsprington, England, and Mary died in Torquay in 1930 in her 79th year.

***MELISR:*** 314 specimens. Miss M. Warburton/ M. Warburton/ Warburton. ***References:*** ABC ('Warburton, Mary Egerton'); WA-BDM (viewed 2011); Mundia (<www.mundia.com/au/Person/10965519/6788038352>, viewed 2013); *West Australian* (7 July 1887: 3, departure); *West Australian* (27 March 1889: 3, father's death); The Peerage (<http://www.thepeerage.com/p42709.htm>, viewed 2014). ***Map:*** Appendix 3.

**WARBURTON, Winifred Egerton** (later Mrs Hassell), 1880–1973, coll. WA. Born in Yeriminup, WA, one of four children, to settlers George Grey Egerton Warburton (c.1844–1913) and Amy Sophy née Hester (1851–1933). The family settled at 'Yeriminup Estate' on the Frankland River. Winifred collected MEL specimens (including fungi) at Gordon River, 1896. Her great-uncle, Peter Egerton Warburton (1813–1889) and aunt, Mary Egerton Warburton, also collected MEL specimens. In 1907, Winifred married John (Jock) Clifton Hassell (1879–1945) of Jarramunyup. They had one daughter. Winifred's father-in-law, Albert Young Hassell (1841–1918) also collected MEL specimens. Winifred was divorced in 1928, and in 1932 married Thomas Elliott. Winifred died in Perth in 1973 in her 93rd year.

***MELISR:*** 11 specimens. Miss Egerton-Warburton/ Miss W. Warburton/ Miss Egerton. ***References:*** ABC ('Warburton, W.', 'Hassell, Albert Young'); Massee, G. (1898). Fungi Exotici, I. *Bull. Misc. Inf. Kew*: 123; *West Australian* (19 January 1907: 1, marriage); *West Australian* (7 June 1913: 10, father's death); *Western Mail* (12 October 1933: 27, 'A pioneer's daughter: late Mrs. A.S. Egerton-Warburton'); *Western Mail* (19 May 1945: 1, husband's death); Mundia (<www.mundia.com/au/Person/10965519/6788072638>, viewed 2013). ***Map:*** Appendix 3.

**WARBY, Queenie** (Miss), coll. NSW. Born in NSW, one of eleven children, to a grazier, James Edward Warby (c.1839–1910), and Sarah née Lakeman (d.1911). 'Queenie' was probably the familiar name of one of three sisters: Sarah Florence Warby (1873–1969), Mary Lakeman Warby (1883–1975) or Amy Warby (1888–1911). The Warby family settled at the sheep station 'Billinbah', Narrandera in 1873. Queenie collected (numbered) MEL specimens at Narrandera, and Murrumbidgee River, 1894–1895. None of the sisters married. Amy Warby and her mother were murdered at 'Billinbah' in 1911.

***MELISR:*** 34 specimens. Miss Queenie Warby/ Miss Q. Warby/ Miss Warby. ***References:*** A8C ('Warby, Queenie'); BDM-NSW (viewed 2011); *Sydney Morning Herold* (17 May 1910: 10, father's death); *Sydney Morning Herald* (30 January 1911: 9, murders). ***Map:*** Appendix 3.

**WEBB, (Miss)**, fl. 1889, coll. SA. Collected a MEL specimen at St Vincent Gulf, 1889.

***MELISR:*** 1 specimen. Miss Webb.

**WEBB, (Mrs)**, fl. 1895, coll. WA. Probably Lucy Webb née Mew/s (c.1855–1938). Born in WA, to a sailor, Robert

Mew, and Jane Muller/Ayres/Gordon. Lucy is described as 'part-Aboriginal'. In 1875, Lucy married ex-convict, and professional natural history collector, William Heaton Webb (c.1834–1897), who had already been married to Sarah née Heywood. The Webbs were based in Albany where they had eight children, the youngest of whom was called May Mueller Webb (b.1892). Lucy probably collected MEL specimens (as 'Mrs Webb') north of King George Sound, 1895. Lucy's husband also collected MEL specimens. Lucy's son, Thomas Webb (1877–1903), collected a MEL specimen with Lucy Eades. After William Webb's death, Lucy lived in Perth where she was convicted of obscene language, loitering and vagrancy, and served time in gaol. Lucy may have remarried, and died in Perth in 1938, aged 83.

***MELISR:*** 5 specimens. Mrs Webb. ***References:*** ABC ('Webb, William'); WA-BDM (viewed 2013); Hanstead family tree (<ancestry.com.au>, viewed 2013); Albany History Collection (<history.albany.wa.gov.au/files/persons>, viewed 2013); *Daily News* (15 January 1918: 7, 'Air polluted by Black Angels'); *Daily News* (14 January 1930: 1, '"Sand Patch" episode'). ***Map:*** Appendix 3.

**WEHL, (Mrs)** *see* **Mueller/Müller Clara Christine Maria**

**WEHL, Louise Therese** (later Mrs Matthiessen), 3 October 1860 – 17 October 1952, coll. SA. Born in SA, one of fifteen children, to Eduard Wehl (1823–1876), physician and settler, and Clara Christina Maria née Mueller (1833–1901). The family settled at Mount Gambier, but moved to 'Ehrenbreitstein', near Millicent in 1871. Louise was appointed postmistress at Appila-Yarrowie. Louise collected MEL specimens (as 'Louise Wehl') at Appila, 1880–1884, Rivoli Bay, Broughton River, Clare, 1882, upper end of Spencer Gulf, 1882. In 1889, she married John Francis Matthiessen (1859–1945) of 'Hill View', Laura, and they had three children. Louise collected MEL specimens (as 'Mrs Matthieson') at Rocky River, 1894. Louise's parents, and her sisters Marie and Meta Wehl, also collected MEL specimens. Louise died in Griffith, NSW, in 1952, aged 92. Eleven letters from M to Louise survive.

***MELISR:*** 168 specimens. Miss Louise Wehl/ Louisa Wehl/ Louise Wehl/ Miss L. Wehl/ L.T. Wehl/ L. Wehl/ Miss Wehl/ Mrs Matthiessen/ Mrs Matthiesen/ L. Mathieson. ***References:*** ABC (given as two separate entries: 'Wehl, Louise Therese', 'Matthieson, Mrs'); Indexes to South Australian BDMs, State Library of Victoria; *Advertiser* (27 June 1889: 4, marriage). ***Mueller Project letters:*** L80.07.08, L82.10.10, L82.10.30, L84.09.10, L84.09.29, L84.12.25, L85.01.10, L85.02.26, L87.10.25 to Wehl; L89.07.06, L96.07.02 to Matthiessen. ***Map:*** Appendix 3.

**WEHL, Marie Magdalene** (Miss), 6 August 1862–1960, coll. SA, Qld. Born in SA, one of fifteen children, to Eduard Wehl (1823–1876), physician and settler, and Clara Christina Maria née Mueller (1833–1901). The family settled at Mount Gambier, but moved to 'Ehrenbreitstein', near Millicent in 1871. Marie was a wildflower artist, and collected MEL specimens (including fungi) in SA at Lake Bonney, 1887; and in Qld at Surat, 1891–1892; and the upper Balonne River, 1894–1896. Marie collected type specimens of *Agoricus olivoceoolbus* Cooke & Massee (1887), *Agaricus ozes* var. *crossipes* Cooke & Massee (1887), *Agaricus subcorticolis* Cooke & Massee (1887), *Agoricus oustrolis* Cooke & Massee (1887), *Agaricus wehlionus* F.Muell. (1887), named for her, *Agoricus olidus* Cooke & Massee (1887), *Agoricus limonius* Cooke & Massee (1887) and *Ponus corbonorius* Cooke & Massee (1887). Marie's parents, and her sisters Louise and Meta Wehl, also collected MEL specimens. Marie did not marry, and died in 1960 in her 98th year at Perth, WA.

***MELISR:*** 47 specimens. Miss Marie Wehl/ Miss M. Wehl/ M. Wehl/ Miss Wehl. ***References:*** ABC ('Wehl, Maria/Marie Magdalena'); WA-BDM (viewed 2013); Cooke, M.C. (1887). Some Australian Fungi. *Grevilleo* **15(75)**, 93–95. May, T., Maroske, S. & Sinkora, D. (1995). The mycologist, the baron, his fungi hunters and the mystery artist. *Botonic Mogozine* **6**, 36–39. ***Partroit:*** RBG Melbourne (Appendix 1). ***Mop:*** Appendix 3.

**WEHL, Meta Agnes** (later Mrs Stenhouse), 21 December 1875 – 1974, coll. SA. Born in SA, one of fifteen children, to Eduard Wehl (1823–1876), physician and settler, and Clara Christina Maria née Mueller (1833–1901). The family settled at Mount Gambier, but moved to 'Ehrenbreitstein', near Millicent in 1871. Meta (and her brother Arthur Wehl) collected MEL specimens (fungi) around 'Ehrenbreitstein', Millicent, n.d. Her sister Marie Wehl, (who also collected MEL specimens), would sketch and paint the fungi, then dry them and send them to M. It is likely that Marie is attributed as the collector of specimens obtained by Meta and Arthur Wehl. Meta's parents, and sisters Louise and Marie Wehl, also collected MEL specimens. In 1901, Meta married a timber merchant, Andrew Stenhouse, in Port Adelaide. They lived in Broken Hill and had at least two children. Meta died in 1974 in her 99th year.

***MELISR:*** no specimens. ***References:*** Indexes to South Australian BDMs, State Library of Victoria; NSW-BDM (viewed 2014); Letter 9 September 1942, Meta Stenhouse to Margaret Willis (Library, RBG Melbourne). ***Partrait:*** RBG Melbourne (Appendix 1).

**WELLS, Julia Susanna** (later Mrs Harris), 1842 – 8 July 1911, coll. WA. Born in Perth, WA, one of at least three children to Richard Wells (d.1846), first manager of the Western Australian Bank, and Susannah née Fortesque. Julia collected MEL specimens at 'Boxvale' near York, 1877, and at the Swan River, 1886. She married Robert Harris and they

had at least one daughter. Julia continued to collect after her marriage, collecting at the Blackwood River, Boxvale, and King George Sound, n.d. In 1911, she died aged 68, after an operation at the Perth Public Hospital.

***MELISR:*** 178 specimens. Miss Julia S. Wells/ Jul. Wells/ Miss J.S. Wells/ J.S. Wells/ J. Wells/ Miss Wells/ Wells/ J. Harris/ Harris. ***References:*** ABC ('Wells, Julia/Julie Susanna'); WA-BDM (viewed 2011); *West Australian* (23 June 1908: 2, letter to editor); *West Australian* (14 July 1911: 8, death); *Western Mail* (15 July 1911: 31, death). ***Map:*** Appendix 3.

**WILCOX, Mary Anne** née West, c.1831 – 22 November 1892, coll. NSW. Born in NSW, one of thirteen children, to Obed West (c.1807–1891), of 'Barcom Glen', near Woolloomoolloo, and Jane Margaret née Lindsey (c.1810–1875). In 1851, Mary married James Fowler Wilcox (1823–1881), a naturalist and settler, and they had thirteen children. The family acquired land at Dallinga, South Grafton in 1857. Mary collected MEL specimens at South Grafton, 1884, 1889. Her husband also collected MEL specimens. In 1892, Mary died at Dallinga, aged 60. Two letters from Mary to M survive.

***MELISR:*** 2 specimens. Mrs Wilcox/ Wilcox. ***References:*** ABC ('Wilcox, James Fowler'); ADB ('Obed West', viewed 2011); *Clarence & Richmond Examiner* (16 July 1881: 2, 'the late Mr J.F. Wilcox, J.P.'). *Clarence & Richmond Examiner* (26 November 1892: 4, death). ***Mueller Project letters:*** LB4.12.18 from Wilcox. ***Handwriting:*** RB M55 M1, RBG Melbourne (Appendix 2). ***Map:*** Appendix 3.

**WISE, Lilian (Lillie) Millicent** (later Mrs Cater), 1882–1965, coll. Vic. Born in Sale, Vic., one of at least three children, to a solicitor and politician, George Henry Wise (1853–1950), and Mary Thornton née Smith (c.1857–1939). Lilian attended the Ladies' High School in Sale. In 1894, she was described as 'a youthful disciple' of Alexander Purdie (1859–1905), a teacher at the Sale School of Mines, who also collected MEL specimens. Lillie collected a MEL specimen at Sale, 1894. Lillie's sister May Wise and friend Muriel Bennett also collected MEL specimens. A paper called 'List of orchids collected near Sale' by May and Lilian Wise and Muriel Bennett was communicated to a meeting of the FNCV on 13 May 1895. In 1920, Lillie married Jack Cater, and they had three children. Lillie died in 1965 in her 83rd year.

***MELISR:*** no specimens. ***References:*** *Victorian Naturalist* (May 1895: 13); Indexes to Victorian BDMs, State Library of Victoria; *Gippsland Times* (3 August 1950: 3, father's obituary). ***Mueller Project letters:*** L95.10.01 from M. Wise. ***Map:*** Appendix 3.

**WISE, Mary (May) Isabel** (Miss), 18 January 1882 – 27 September 1955, coll. Vic. Born in Sale, Vic., the eldest daughter of a solicitor and politician, George Henry Wise (1853–1950), and Mary Thornton née Smith (c.1857–1939). May attended the Ladies' High School in Sale. In 1894, she was described as 'a youthful disciple' of Alexander Purdie (1859–1905), a teacher at the Sale School of Mines, who also collected MEL specimens. May collected MEL specimens at Sale, 1894, 1905, 1925; Port Albert Rd and La Trobe River, 1894–1895; Longford, 1895; and Portland, 1895. May's sister Lilian Wise and friend Muriel Bennett also collected MEL specimens. A paper called 'List of orchids collected near Sale' by May and Lilian Wise and Muriel Bennett was communicated to a meeting of the FNCV on 13 May 1895. May attended the Sale School of Mines and was appointed a botany teacher there in 1901. Later she was employed in clerical work in Melbourne, Perth, WA, and then as a law clerk in her father's office in Sale. She retired to Sassafras where she died in 1955 aged 73. May became a life member of the FNCV in 1955 and apart from plants also collected moths and butterflies. One letter from Wise to M survives.

***MELISR:*** 33 specimens. Miss May Wise/ Miss M. Wise & Miss Bennett/ Miss Wise/ M. Wise. ***References:*** ABC ('Wise, M.' 'Purdie, Alexander'); RB M55 316, RBG, Melbourne; Indexes to Victorian BDMs, State Library of Victoria; *Gippsland Times* (20 December 1893: 3, Ladies' High School); *Gippsland Times* (15 November 1894: 3, relationship with Purdie); *Gippsland Times* (10 August 1939: B, mother's death); *Gippsland Times* (3 August 1950: 3, father's obituary); *Victorian Naturalist* (May 1895: 13). ***Mueller Project letters:*** L95.10.01 from Wise. ***Handwriting:*** RB M55 M1, RBG Melbourne (Appendix 2). ***Map:*** Appendix 3.

**WUTH, Eliza** née Watson, c.1841 – 26 June 1925, coll. Qld. Born in Athens, Greece, to Richard Henry Watson (1808–1868) and Marae née Caraboora. The Watsons were pioneering settlers in Qld. In 1854, Eliza's father married Sarah née Clark and they had ten children. In 1861, Eliza married Ernest Magnus Wuth, a doctor at Dalby. They had seven children. The Wuths selected land at Springsure in 1868. Eliza collected MEL specimens at Springsure Mountains, n.d. Her husband also collected MEL specimens, including the type of *Tetracera wuthiana* F.Muell. (1876), named for him. Eliza and her husband seem to have become estranged, and he disappears from records after resigning as resident surgeon of the Townsville Hospital in 1882. Eliza and her children remained in Springsure, and she died in 1925 aged 84.

***MELISR:*** 2 specimens. Mrs Wuth. ***References:*** ABC ('Wuth, E.'); Family History UK (<www.forum.familyhistory.uk.com/archive/index.php/t-22159.html>, viewed 2013); Qld-BDM (viewed 2013); *Brisbane Courier* (2 July 1925: 6, death). ***Mueller publicatians:*** B76.04.03 (eponymy). ***Mueller Project letters:*** L71.06.17, L73.10.08 from E.M. Wuth. ***Mop:*** Appendix 3.

**Appendix 1.** Portaits of Mueller's female plant collectors

ALDERSEY, Mary Ann (Willunga Branch, National Trust of South Australia)

ATKINSON, Caroline Louisa Waring (Wikimedia Commons)

BARRETT-LENNARD, Amy Eliza, as Mrs Forrest (sourced from the collections of the State Library of Western Australia and reproduced with the permission of the Library Board of Western Australia)

BATE, Mary Harriet

BAUER, Sophie Wilhelmine Eleanore (Ellie), as Mrs Claydon (reproduced with the permission of her family)

BIDDULPH, Harriette Sophia

BUNBURY, Diana Richardson (seated), c.1895 (sourced from the collections of the State Library of Western Australia and reproduced with the permission of the Library Board of Western Australia)

COTTER, Jessie Annie (John Oxley Library, State Library of Queensland, image no: 145591)

COX, Eliza, as Mrs Dixon (Tasmanian Archive and Heritage Office)

CRONIN, Mary Ann, as Mrs Walter, 1970 (© West Australian Newspapers)

CURDIE, Frances Niel, c.1875 (Pictures Collection, State Library of Victoria)

DIETRICH, Konkordia *Amalia*, 1881 (Wikimedia Commons)

DUNCAN, Elizabeth Jane, as Mrs Morrell, 1930 (sourced from the collections of the State Library of Western Australia and reproduced with the permission of the Library Board of Western Australia)

FORREST, Margaret Elvire, c.1890 (sourced from the collections of the State Library of Western Australia and reproduced with the permission of the Library Board of Western Australia)

GUERIN, Jane, 1871 (sourced from the collections of the State Library of Western Australia and reproduced with the permission of the Library Board of Western Australia)

HENDERSON, Euphemia Ethel Elizabeth Spencer Middleton

HUSSEY, Jessie Louise

IRVINE, Jemima Frances, 1902 (Allport Library and Museum of Fine Art, Hobart)

KING, Georgina

LOGUE, Kate French, as Mrs Blight (sourced from the collections of the State Library of Western Australia and reproduced with the permission of the Library Board of Western Australia)

MCCANN, Annie Bellew

MCHARD, Mary Ann, c.1890 (sourced from the collections of the State Library of Western Australia and reproduced with the permission of the Library Board of Western Australia)

MEREDITH, Louisa, c.1850 (Wikimedia Commons)

MUELLER, Clara Christina Maria, as Mrs Wehl, c.1860s

NORTH, Marianne, c.1880 (Wikimedia Commons)

PRIES, Amelia Matilda Richardson, as Mrs Bunbury, 1930 (sourced from the collections of the State Library of Western Australia and reproduced with the permission of the Library Board of Western Australia)

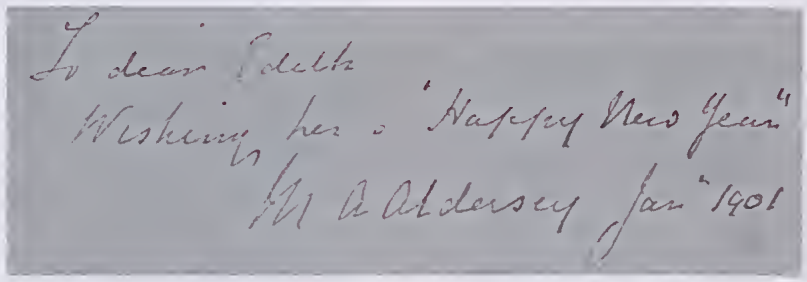
ROWAN, Marian *Ellis*, 1873 (Wikimedia Commons)

SCOTT, Helena, c.1860s (Wikimedia Commons)

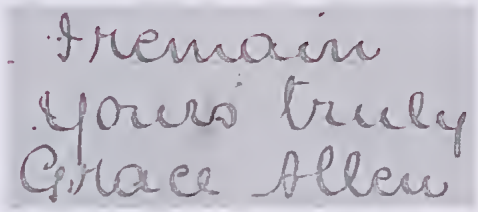
WEHL, Marie Magdalene, 1886 (reproduced with the permission of her family)

WEHL, Meta Agnes

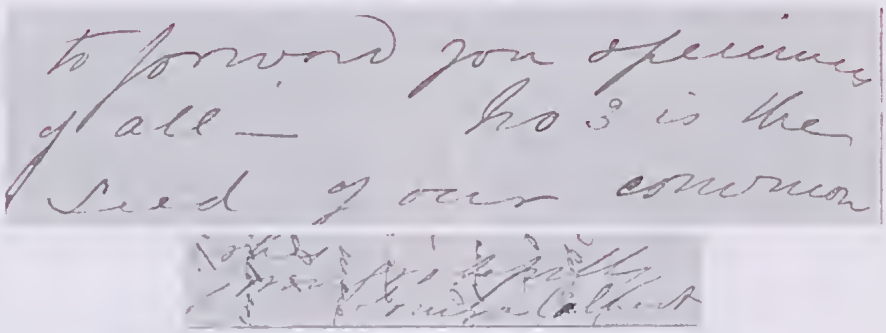
## **Appendix 2.** Handwriting samples of Mueller's female plant collectors



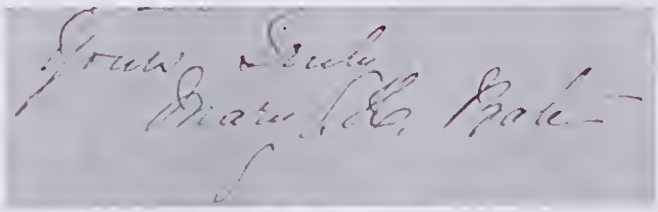
ALDERSEY, Mary Ann, 1901 (Willunga Branch, National Trust of South Australia)



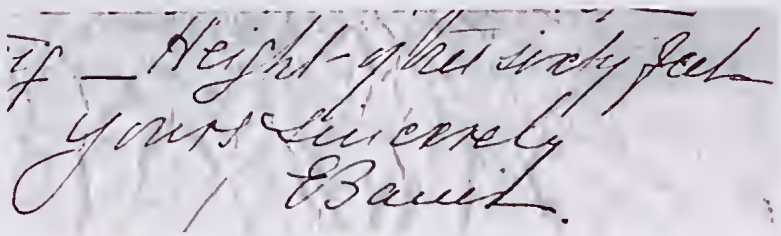
ALLEN, Grace Adelaide, 1894



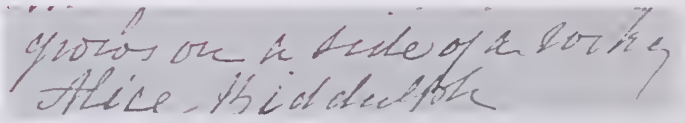
ATKINSON, Caroline Louisa Waring, as Mrs Calvert, 1871



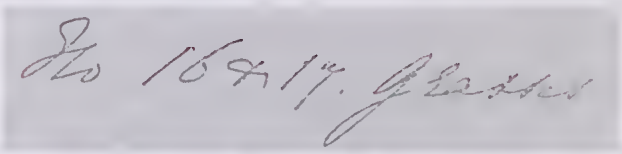
BATE, Mary Harriet, 1884



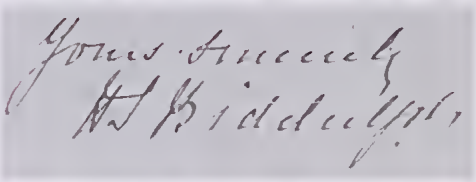
BAUER, Sophie Wilhelmine Eleanore (Ellie), 1886



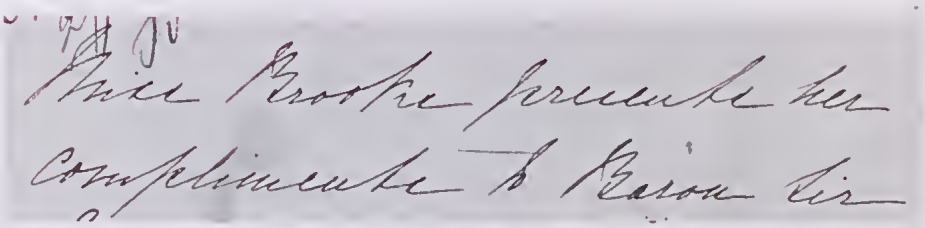
BIDDULPH, Alice Caroline, c.1890



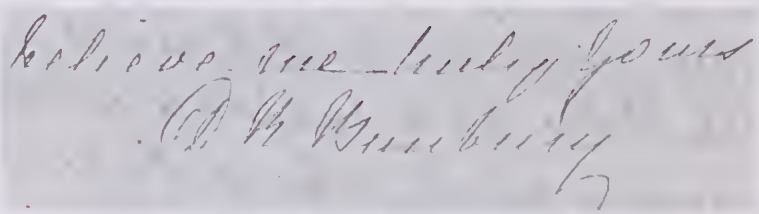
BIDDULPH, Florence Frances, c.1890



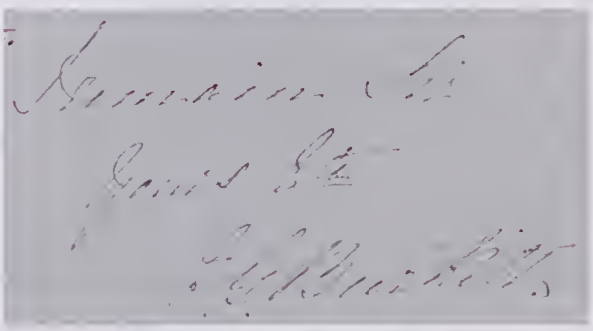
BIDDULPH, Harriette Sophia, 1893



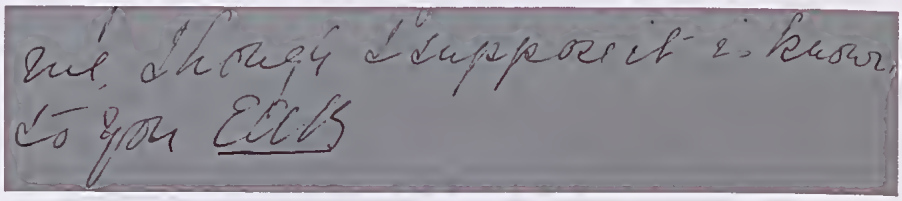
BROOKS, Sarah Theresa, 1893



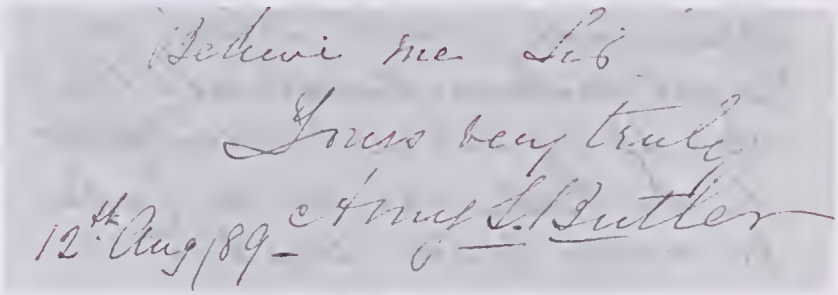
BUNBURY, Diana Richardson, 1880



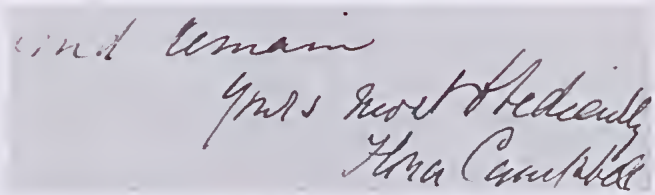
BURKITT, Ellen Gaskin, 1884



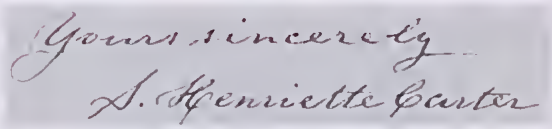
BUSSELL, Edith Agnes, c.1885



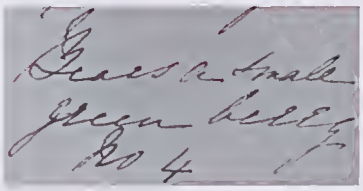
BUTLER, Amy S., 1889



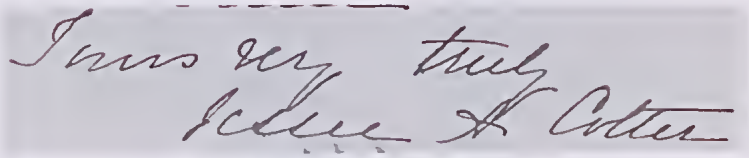
CAMPBELL, Flora Mary, 1887



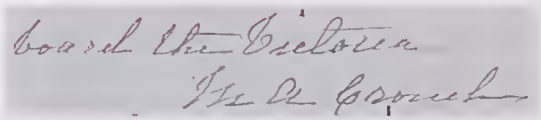
CARTER, Sarah Henriette, 1884



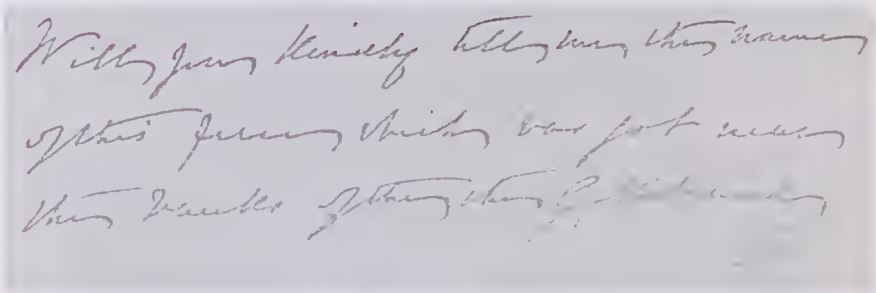
CHAMBERLIN, Miss, c.1876



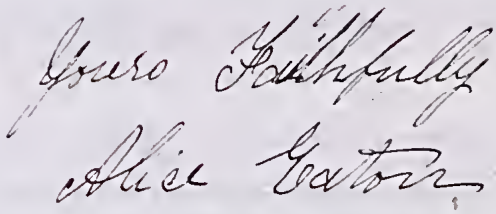
COTTER, Jessie Annie, 1891



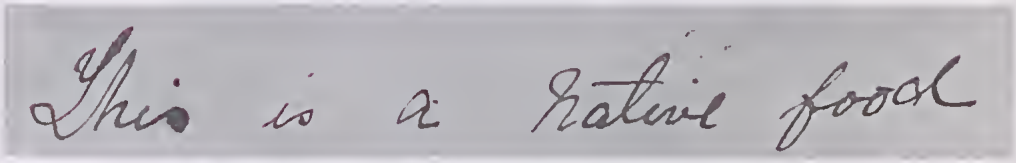
CROUCH, Maria, c.1875

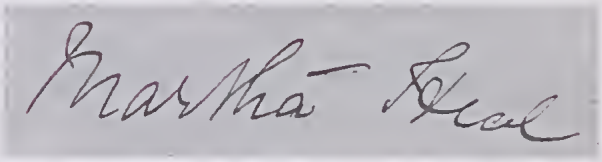


CURDIE, Frances Niel, c.1888

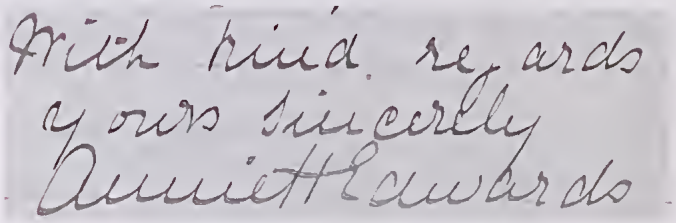


EATON, Alice, 1890

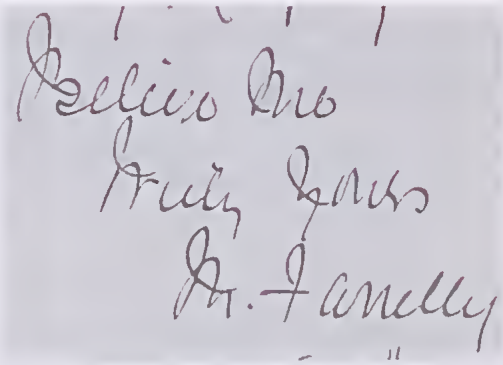




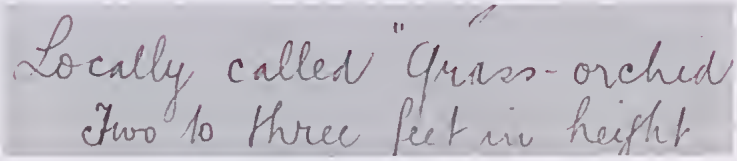
EATON, Mary Martha Vile, as Mrs Heal, c.1893



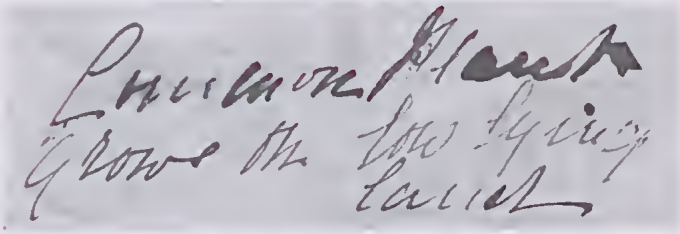
EDWARDS, Annie Helen, 1894



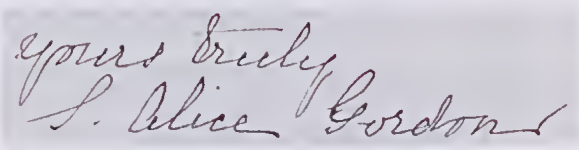
FARRELLY, Mary Martha, 1894



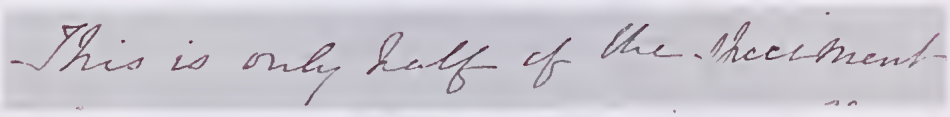
FIELD, Hannah, 1895



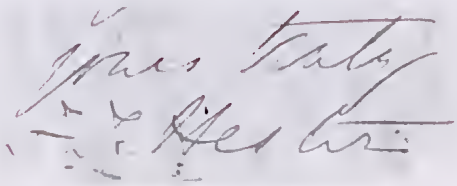
FOOT, Ada, c.1891



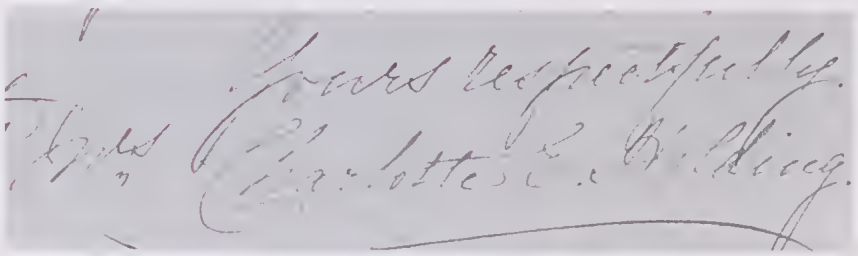
GORDON, Sarah Alice Gordon, 1880



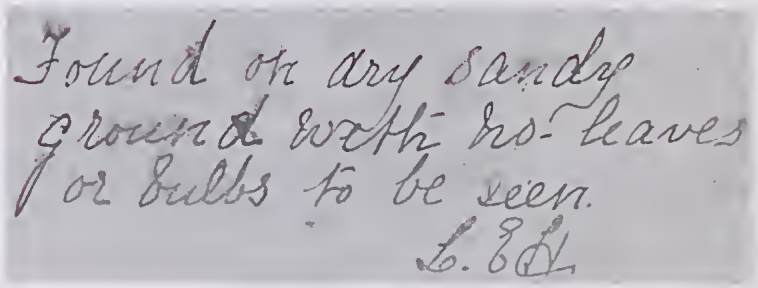
GUERIN, Jane, 1860



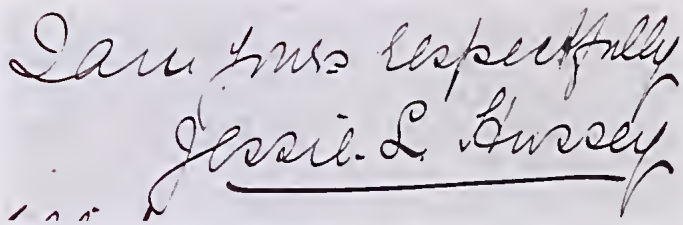
HESTER, Frances Theodosia



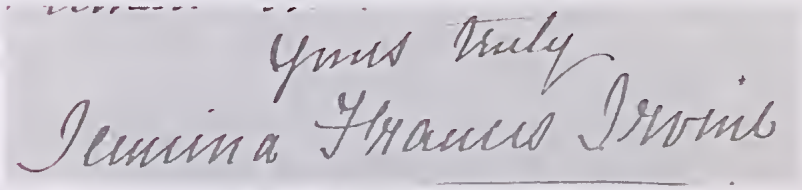
HOLDING, Charlotte Elizabeth, 1891



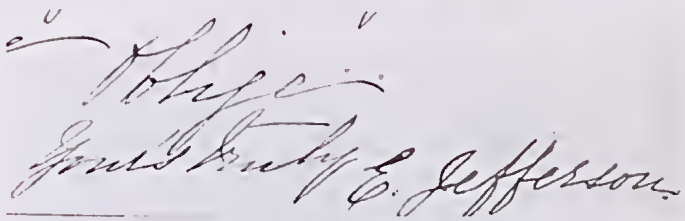
HOLDING, Lucy Edith, 1889



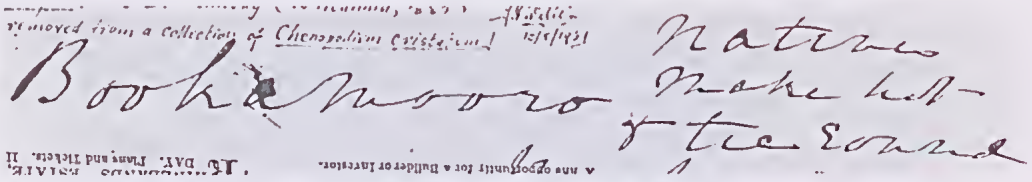
HUSSEY, Jessie Louise, 1894



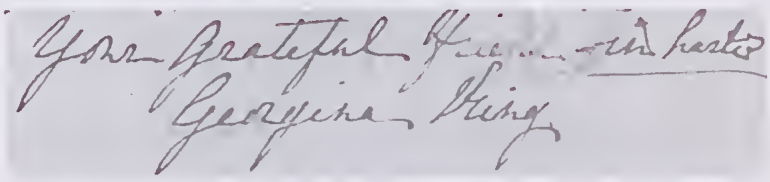
IRVINE, Jemima Frances, 1889



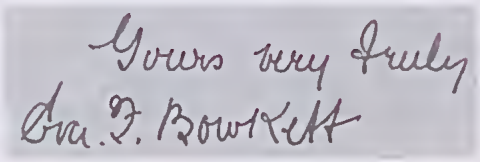
JEFFERSON, Mrs. E., 1880



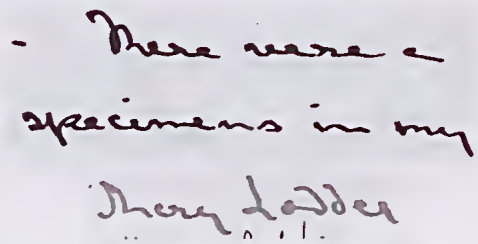
KENNEDY, Mary Bozzum, 1885



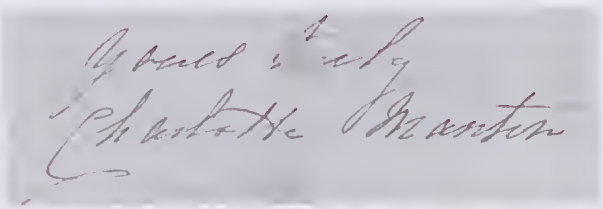
KING, Georgina, 1894



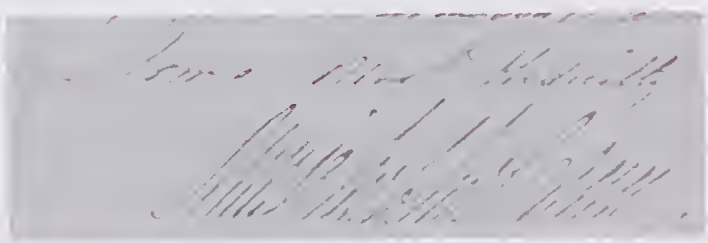
LAMONT, Eva Frances, as Mrs Bowkett, 1886



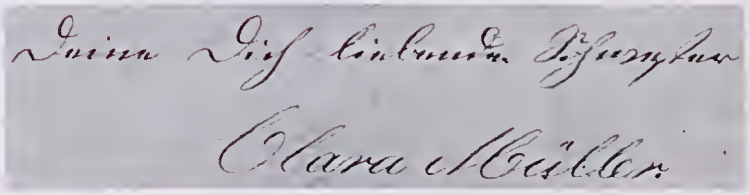
LODDER, Mary Lodder, 1889

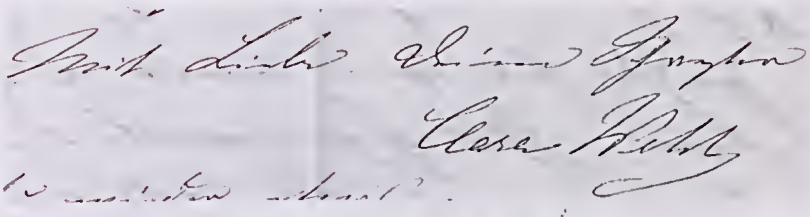


MCCANN, Annie Bellew, 1882

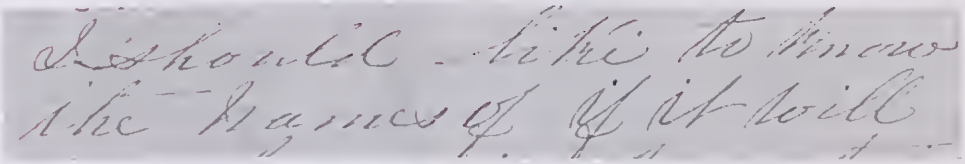


McHARD, Mary Ann, 1883

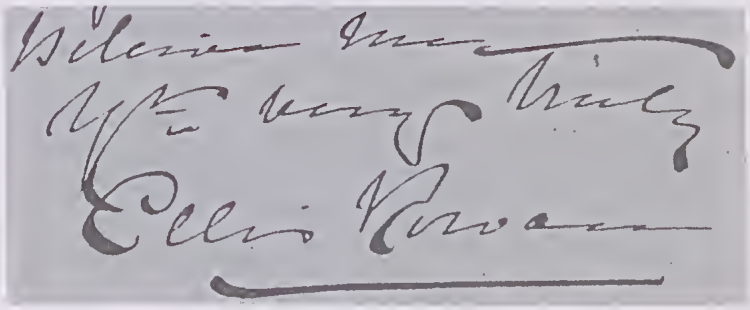




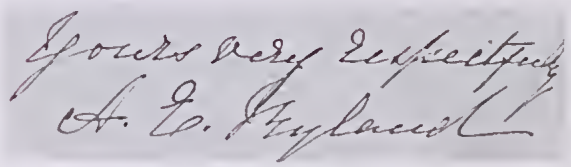
MUELLER, Clara, also as Mrs Wehl



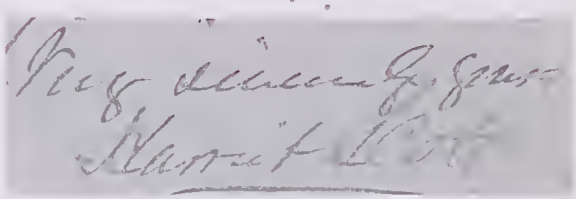
RICHARDS, Anne (Annie) Frances



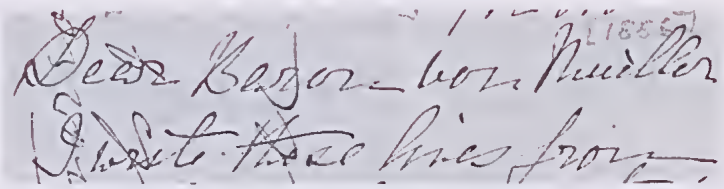
ROWAN, Marian Ellis, n.d.



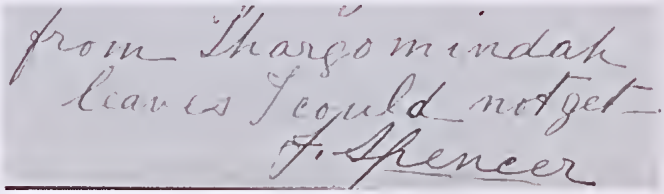
RYLAND, Annie Eliza, 1879



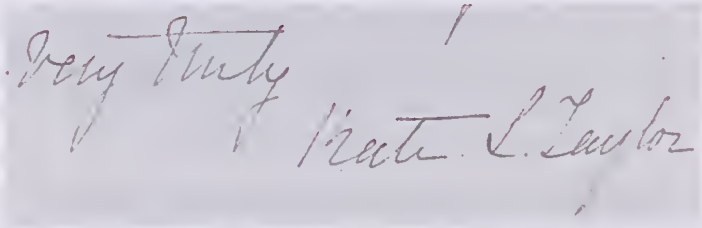
SCOTT, Harriet, 1890



SEWELL, Julia Sewell, 1886

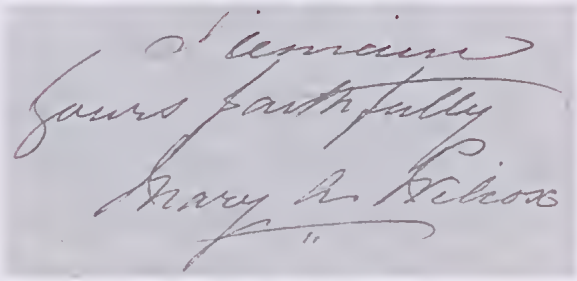


SPENCER, Jessie, c.1885

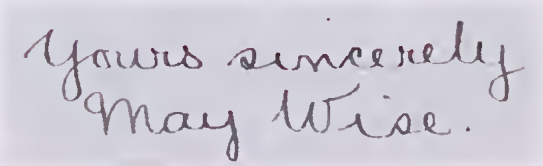


TAYLOR, Catherine (Kate) Louisa, 1880

THORNTON, Edith, 1884

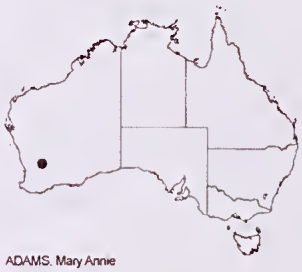


WILCOX, Mary Anne, 1884

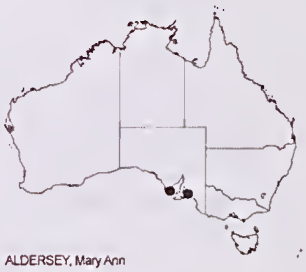


WISE, Mary (May) Isabel, 1895

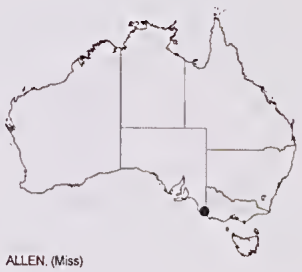
## **Appendix 3.** Maps of the collecting localities of Mueller's female collectors



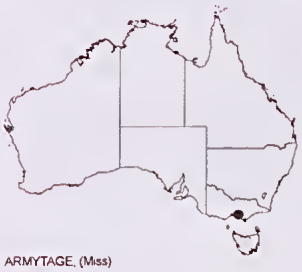
ADAMS, Mary Annie



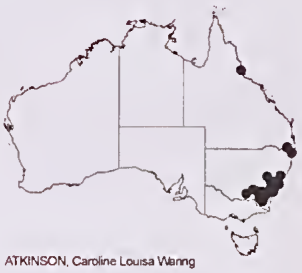
ALDERSEY, Mary Ann



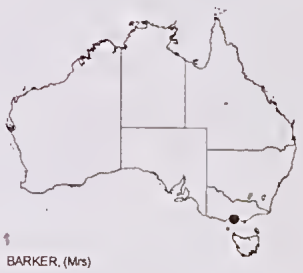
ALLEN, (Miss)



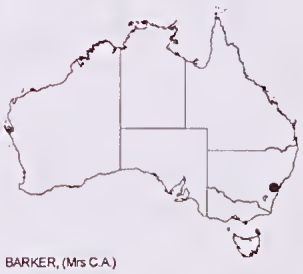
ARMYTAGE, (Miss)



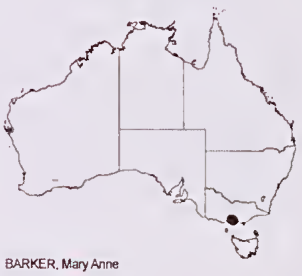
ATKINSON, Caroline Louisa Waring



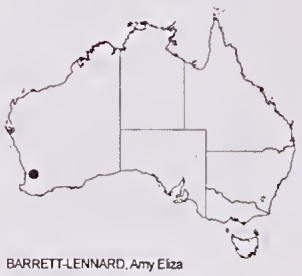
BARKER, (Mrs)



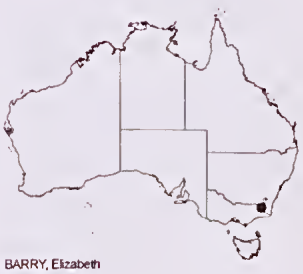
BARKER, (Mrs C.A.)



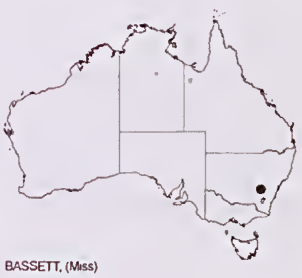
BARKER, Mary Anne



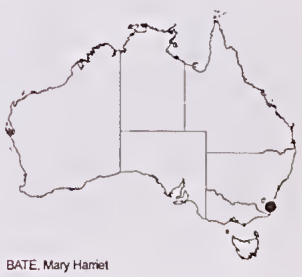
BARRETT-LENNARD, Amy Eliza



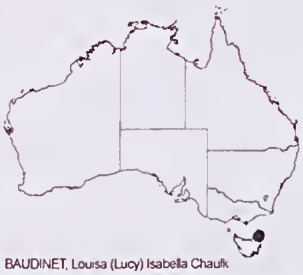
BARRY, Elizabeth



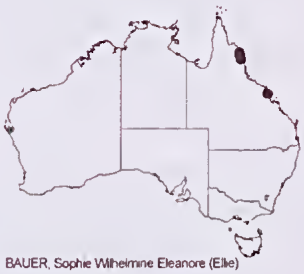
BASSETT, (Miss)



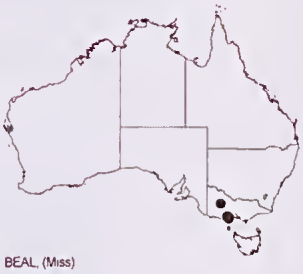
BATE, Mary Harriet



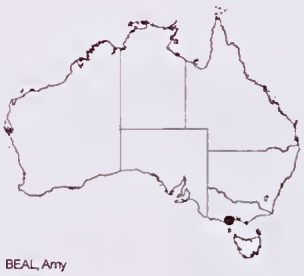
BAUDINET, Louisa (Lucy) Isabella Chaufk



BAUER, Sophie Wilhelmine Eleanore (Ellie)

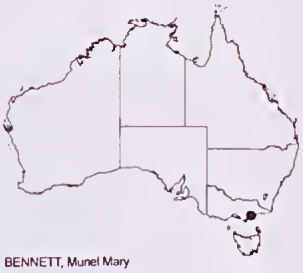


BEAL, (Miss)

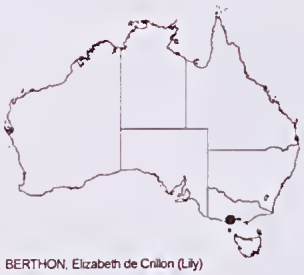


BEAL, Amy

BELL, Annie

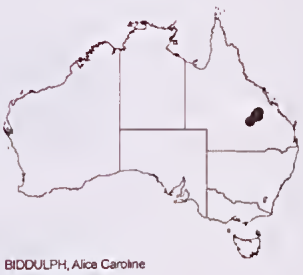


BENNETT, Muriel Mary

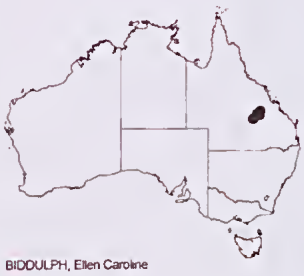


BERTHON, Elizabeth de Crillon (Lily)

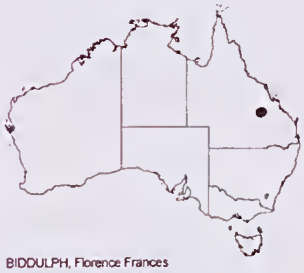
BEST, E.A.



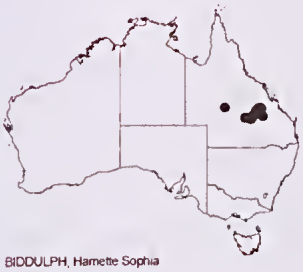
BIDDULPH, Alice Caroline



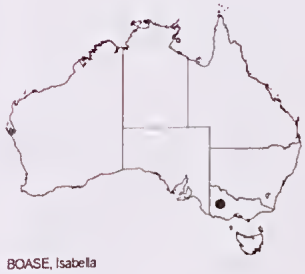
BIDDULPH, Ellen Caroline



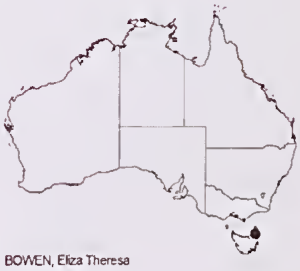
BIDDULPH, Florence Frances



BIDDULPH, Harriette Sophia



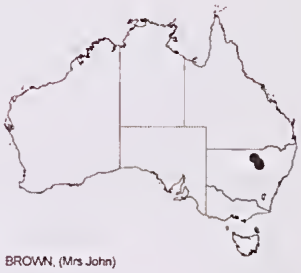
BOASE, Isabella



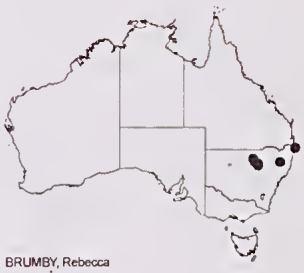
BOWEN, Eliza Theresa

BROOKS, Sarah Theresa

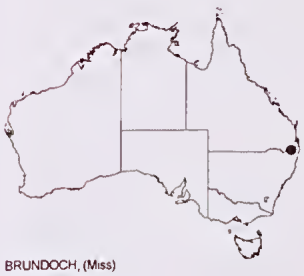
BROTHERTON, Anna Mary Winifred



BROWN, (Mrs John)



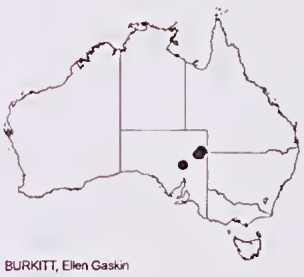
BRUMBY, Rebecca



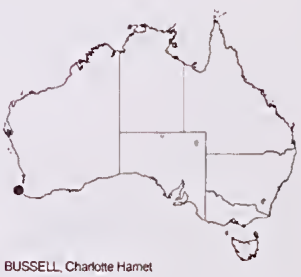
BRUNDOCH, (Miss)

BUCK, E.

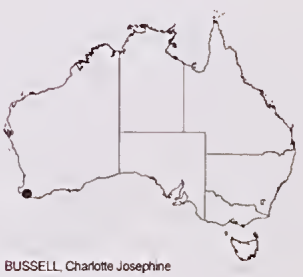
BUNBURY, Diana Richardson



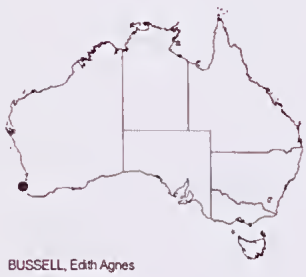
BURKITT, Ellen Gaskin



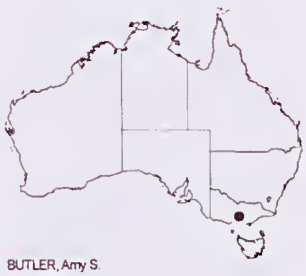
BUSSELL, Charlotte Harriet



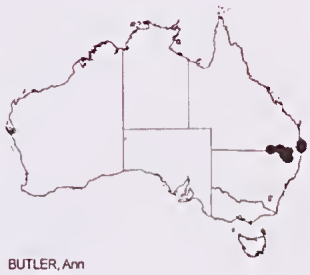
BUSSELL, Charlotte Josephine



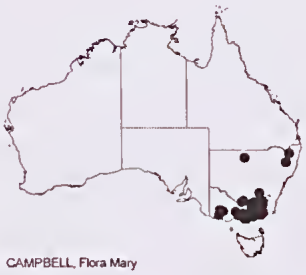
BUSSELL, Edith Agnes



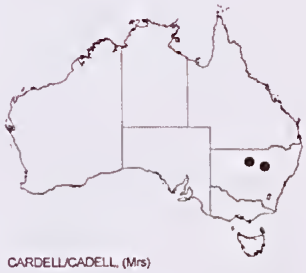
BUTLER, Amy S.



BUTLER, Ann



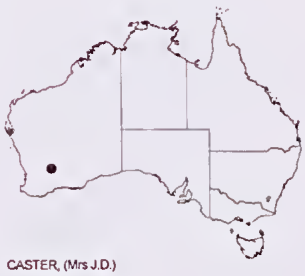
CAMPBELL, Flora Mary



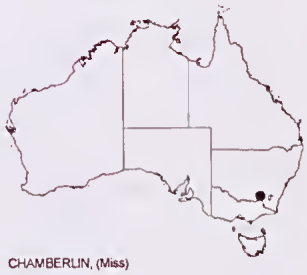
CARDELL/CADELL, (Mrs)

CARTER, Sarah

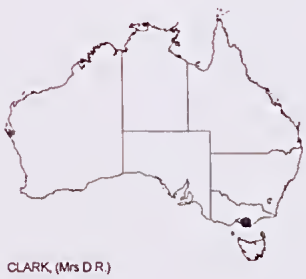
CARTER, Sarah Hennette



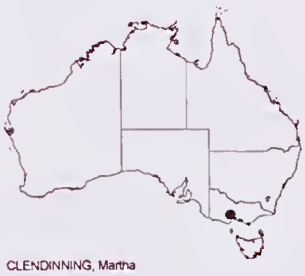
CASTER, (Mrs J.D.)



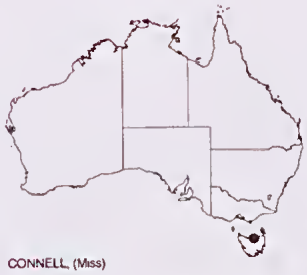
CHAMBERLIN, (Miss)



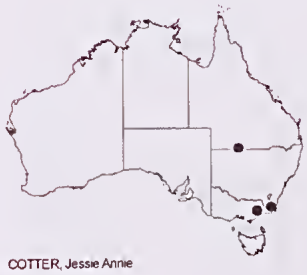
CLARK, (Mrs D.R.)



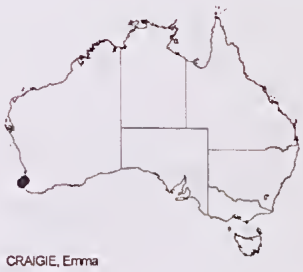
CLENDINNING, Martha



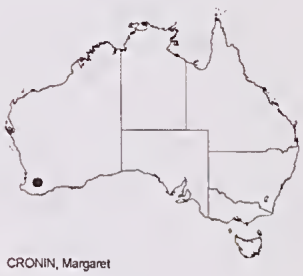
CONNELL, (Miss)



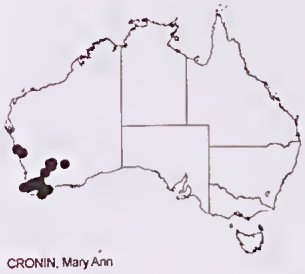
COTTER, Jessie Annie



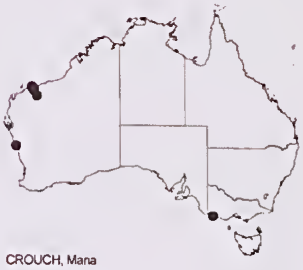
CRAIGIE, Emma



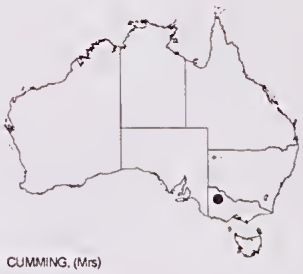
CRONIN, Margaret



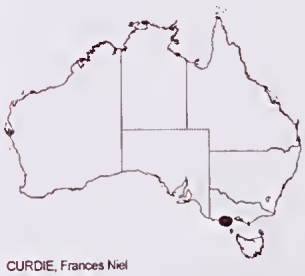
CRONIN, Mary Ann



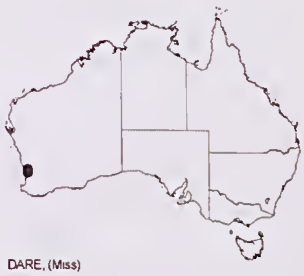
CROUCH, Mana



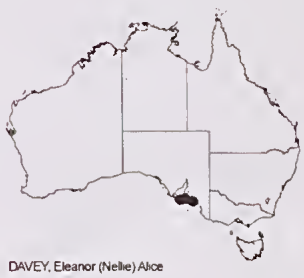
CUMMING, (Mrs)



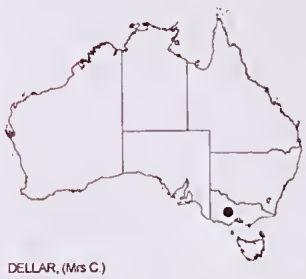
CURDIE, Frances Niel



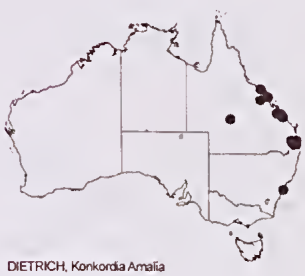
DARE, (Miss)



DAVEY, Eleanor (Nellie) Alice



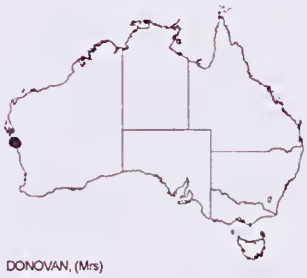
DELLAR, (Mrs C.)



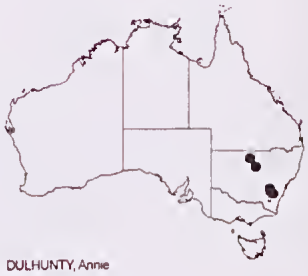
DIETRICH, Konkordia Amalia

DIXON, Mary (May)

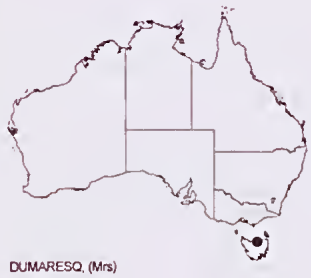
DONALDSON, Agnes Adelaide



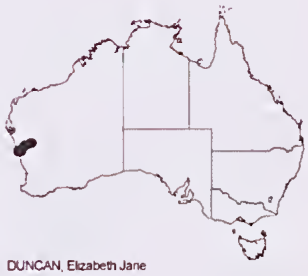
DONOVAN, (Mrs)



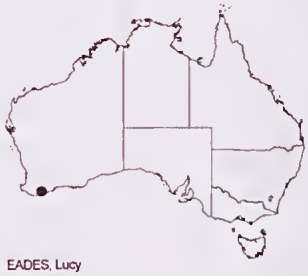
DULHUNTY, Annie



DUMARESQ, (Mrs)



DUNCAN, Elizabeth Jane



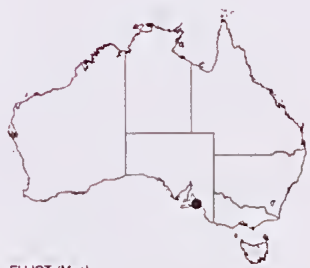
EADES, Lucy

EATON, Alice

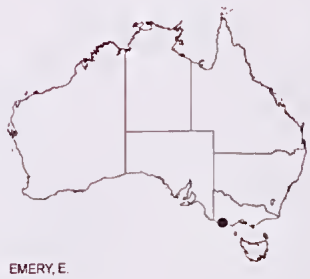
EATON, Mary Ann

EATON, Mary Martha Vile

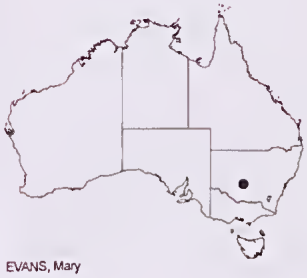
EDWARDS, Annie Helen



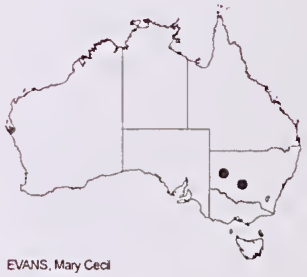
ELLIOT, (Miss)



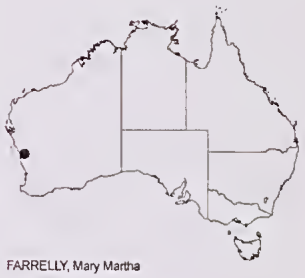
EMERY, E.



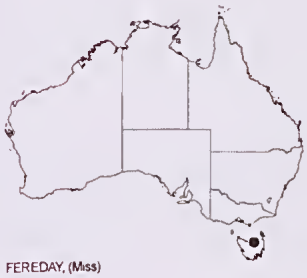
EVANS, Mary



EVANS, Mary Cecil

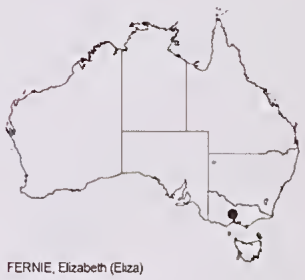


FARRELLY, Mary Martha

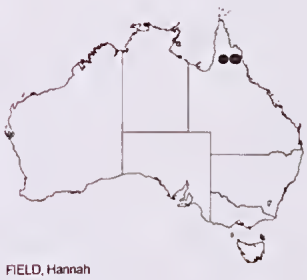


FEREDAY, (Miss)

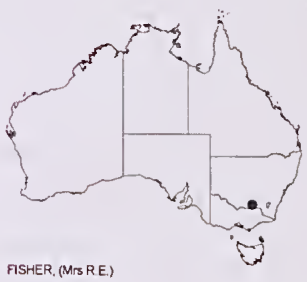
FEREDAY, Susan Georgina Marianne



FERNIE, Elizabeth (Eliza)

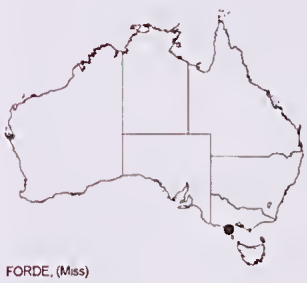


FIELD, Hannah

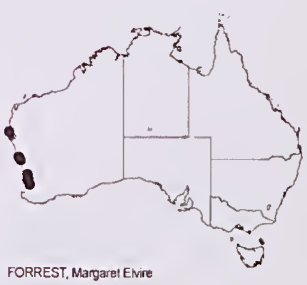


FISHER, (Mrs R.E.)

FOOT, Ada

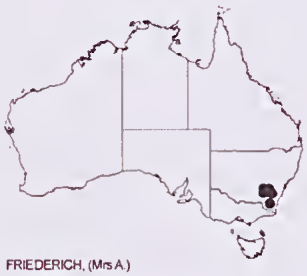


FORDE, (Miss)

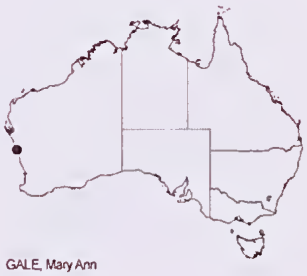


FORREST, Margaret Elvire

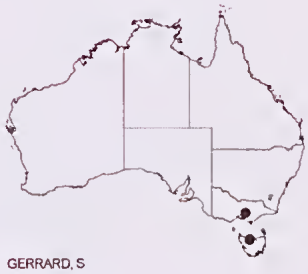
FRANKLYN, Louisa Bessy



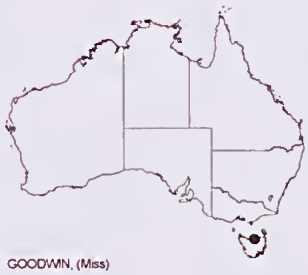
FRIEDERICH, (Mrs A.)



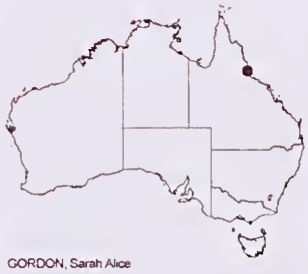
GALE, Mary Ann



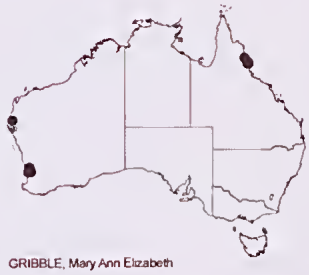
GERRARD, S



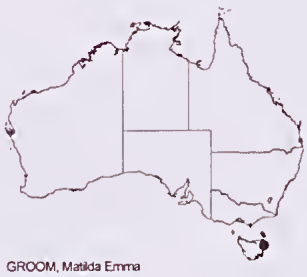
GOODWIN, (Miss)



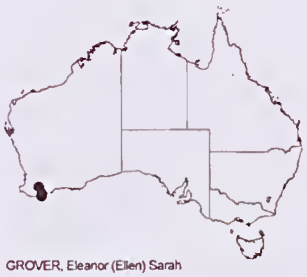
GORDON, Sarah Alice



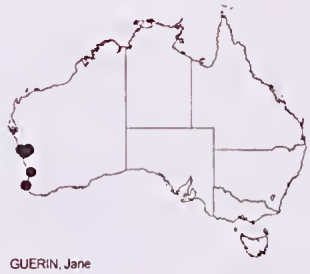
GRIBBLE, Mary Ann Elizabeth



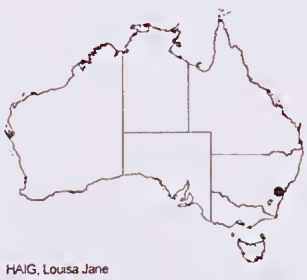
GROOM, Matilda Emma



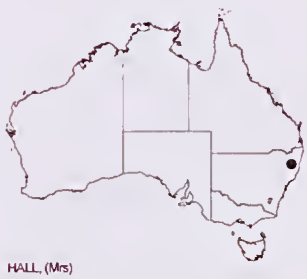
GROVER, Eleanor (Ellen) Sarah



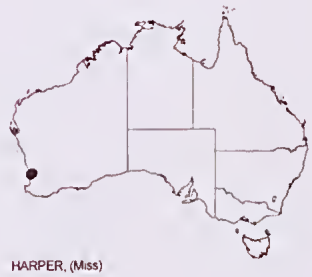
GUERIN, Jane



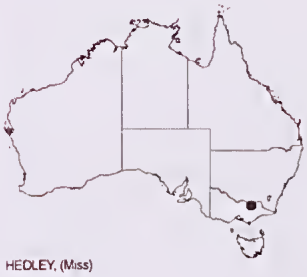
HAIG, Louisa Jane



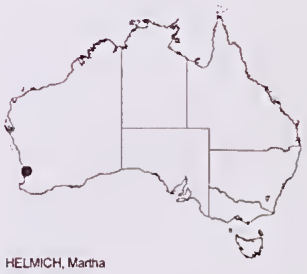
HALL, (Mrs)



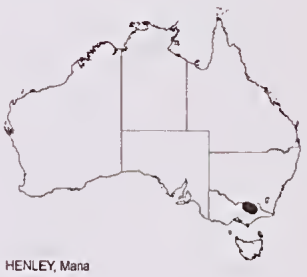
HARPER, (Miss)



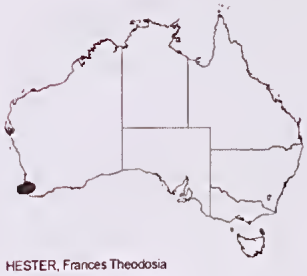
HEDLEY, (Miss)



HELMICH, Martha



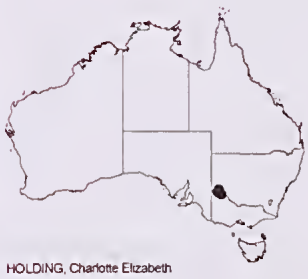
HENLEY, Mana



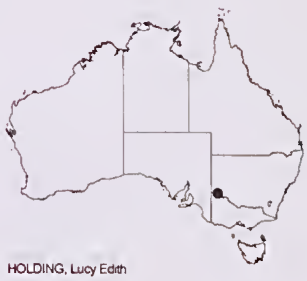
HESTER, Frances Theodosia

HODGKINSON, Mary

HODGKINSON, Virginia Nina



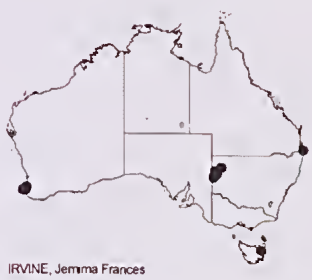
HOLDING, Charlotte Elizabeth



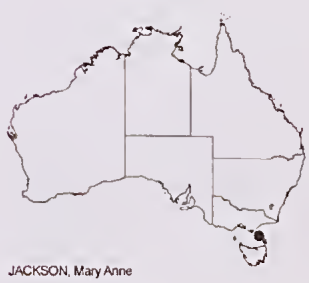
HOLDING, Lucy Edith

HOOD, Jessie Ann

HUSSEY, Jessie Louise

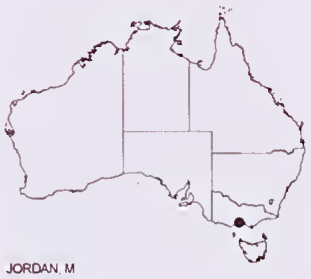


IRVINE, Jemima Frances

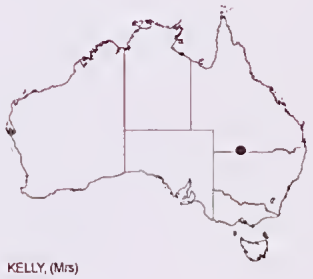


JACKSON, Mary Anne

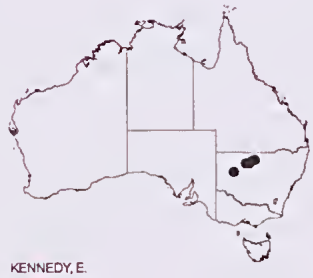
JEFFERSON, (Mrs E.)



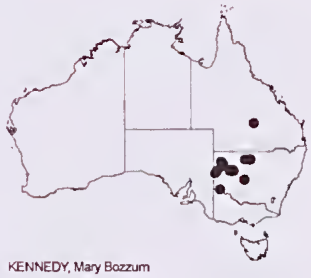
JORDAN, M



KELLY, (Mrs)



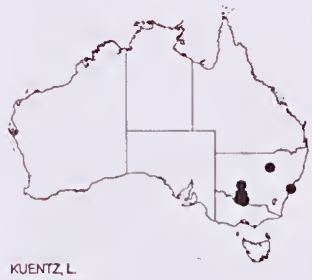
KENNEDY, E.



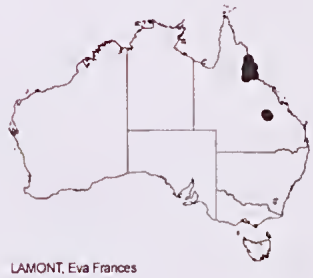
KENNEDY, Mary Bozzum

KING, Georgina

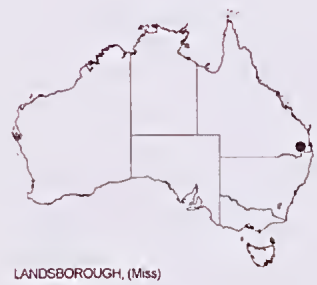
KNIGHT, Ann Augusta (Gussie)



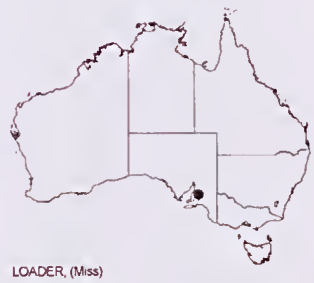
KUENTZ, L.



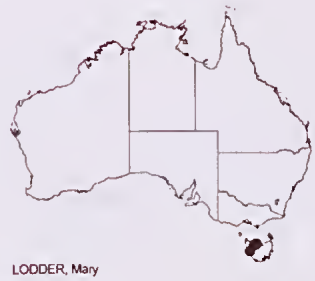
LAMONT, Eva Frances



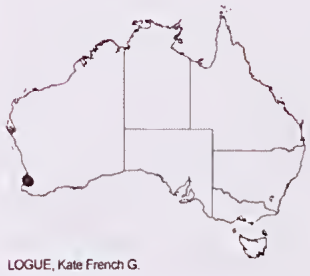
LANDSBOROUGH, (Miss)



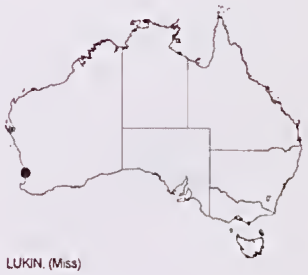
LOADER, (Miss)



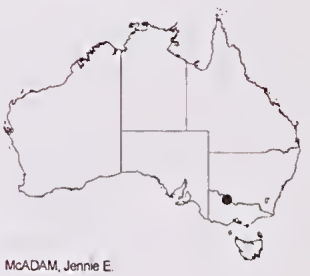
LODDER, Mary



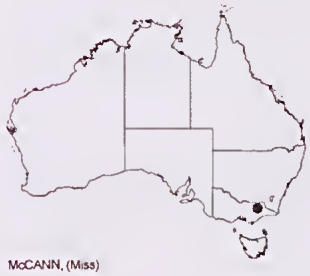
LOGUE, Kate French G.



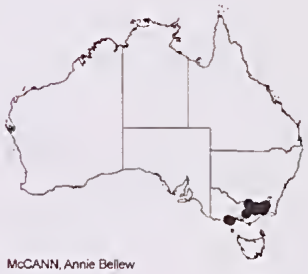
LUKIN, (Miss)



McADAM, Jennie E.

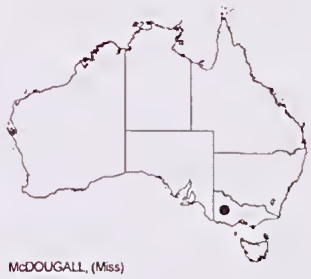


McCANN, (Miss)

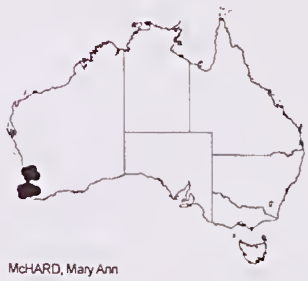


McCANN, Annie Bellew

McDONALD, Nellie

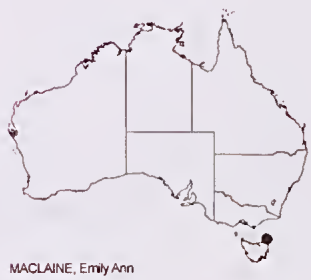


McDOUGALL, (Miss)

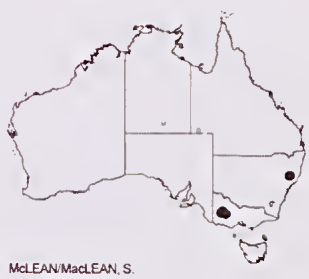


McHARD, Mary Ann

McKELLAR, (Miss)

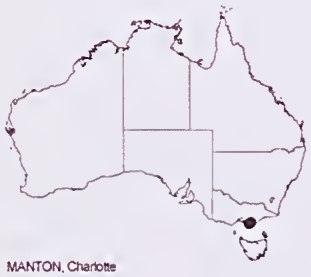


MACLAINE, Emily Ann

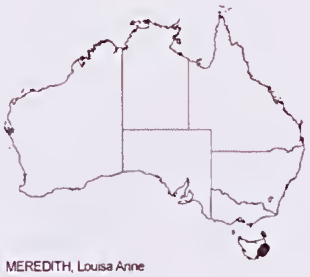


McLEAN/MacLEAN, S.

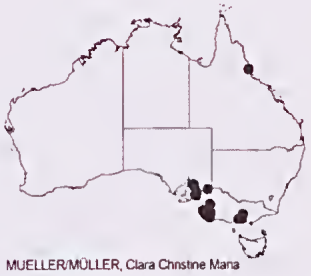
MADDEN, Annie Eliza



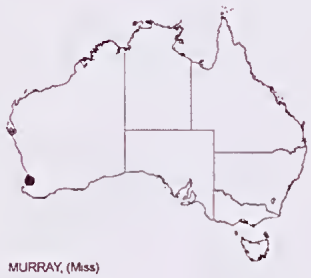
MANTON, Charlotte



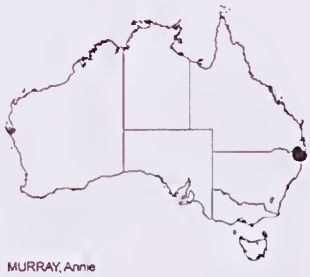
MEREDITH, Louisa Anne



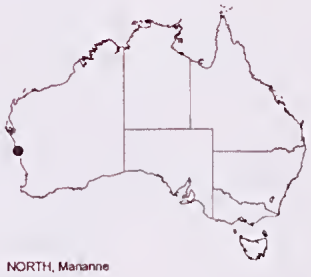
MUELLER/MÜLLER, Clara Christine Maria



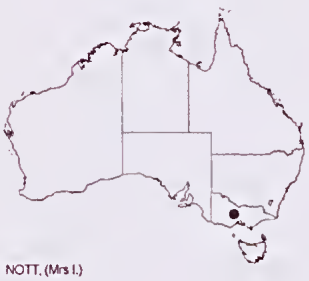
MURRAY, (Miss)



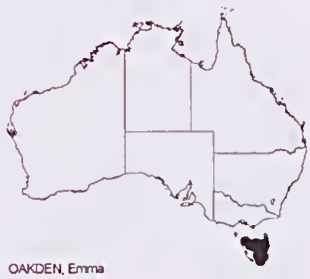
MURRAY, Annie



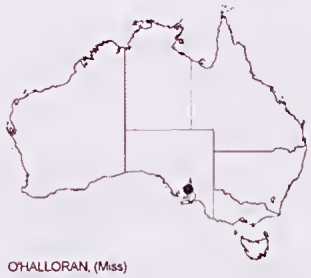
NORTH, Marianne



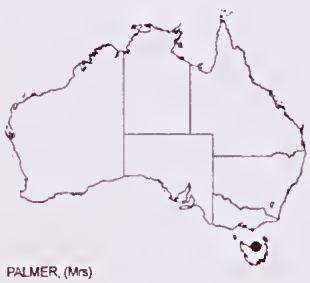
NOTT, (Mrs I.)



OAKDEN, Emma

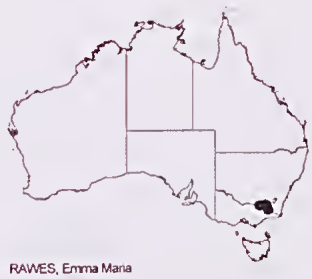


O'HALLORAN, (Miss)

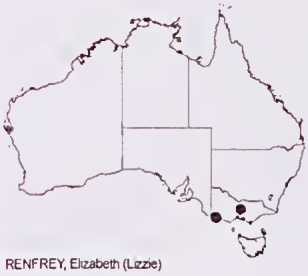


PALMER, (Mrs)

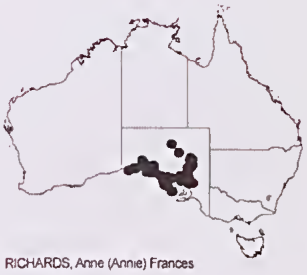
PRIES, Amelia Matilda Richardson



RAWES, Emma Maria

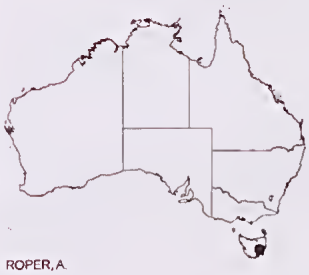


RENFREY, Elizabeth (Lizzie)

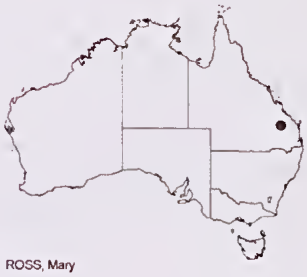


RICHARDS, Anne (Annie) Frances

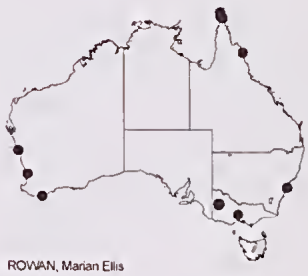
ROBINSON, (Miss)



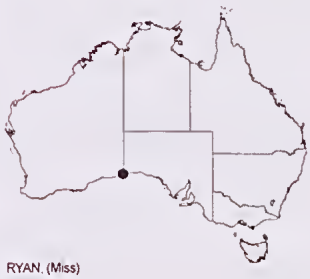
ROPER, A.



ROSS, Mary

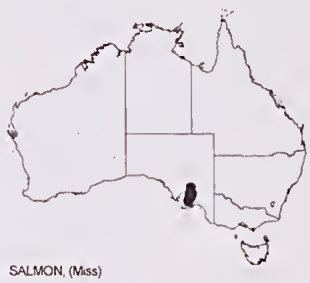


ROWAN, Marian Ellis

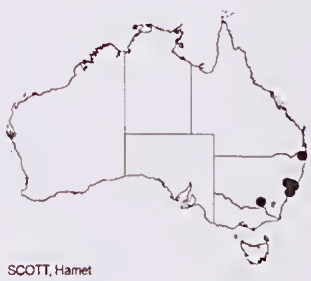


RYAN, (Miss)

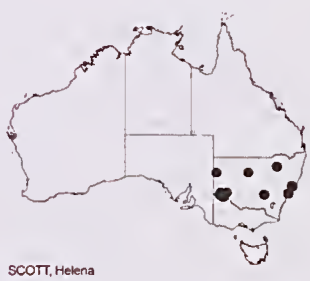
RYAN, Clara Oakley



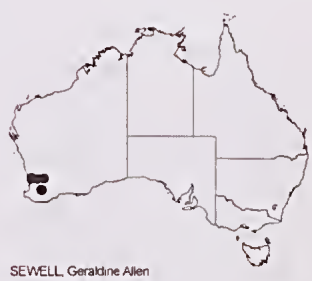
SALMON, (Miss)



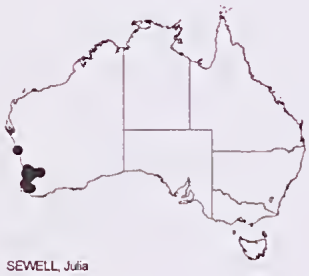
SCOTT, Harriet



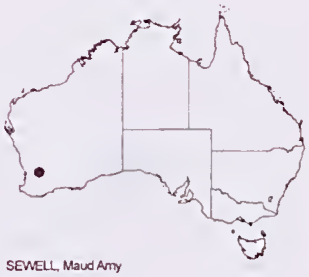
SCOTT, Helena



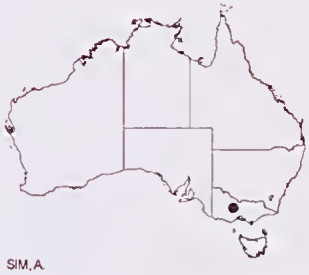
SEWELL, Geraldine Allen



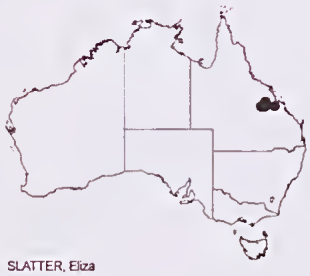
SEWELL, Julia



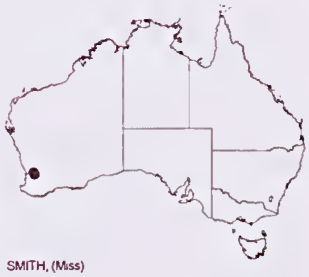
SEWELL, Maud Amy



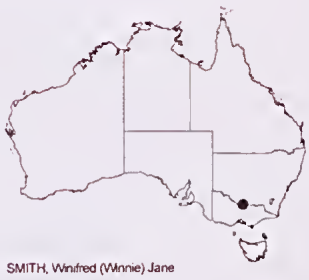
SIM, A.



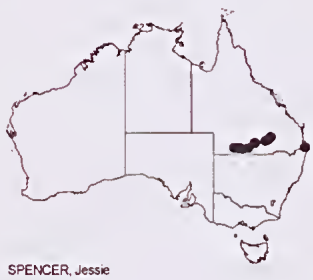
SLATTER, Eliza



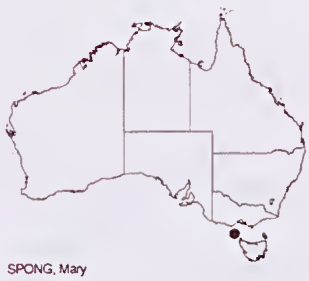
SMITH, (Miss)



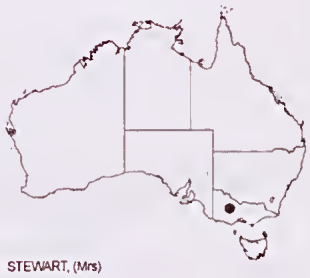
SMITH, Winifred (Winnie) Jane



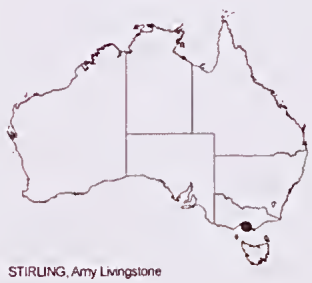
SPENCER, Jessie



SPONG, Mary



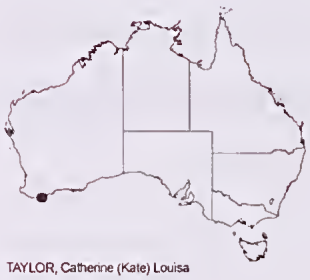
STEWART, (Mrs)



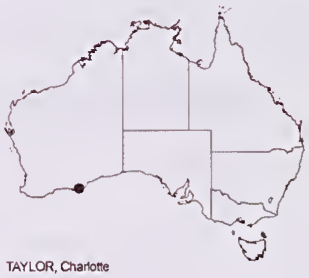
STIRLING, Amy Livingstone

SUTTON, M.

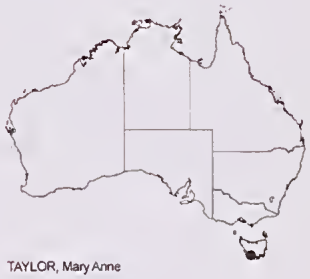
TAYLOR, (Miss)



TAYLOR, Catherine (Kate) Louisa

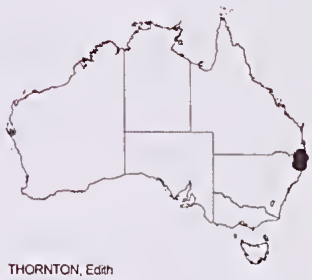


TAYLOR, Charlotte

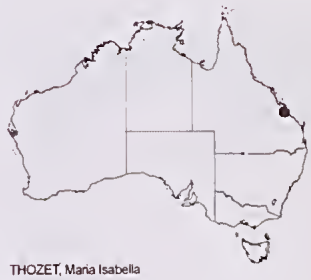


TAYLOR, Mary Anne

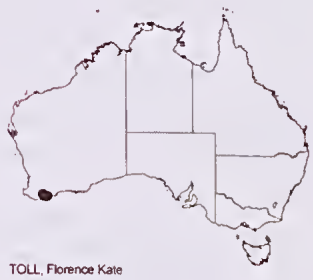
TEPPER, Isabella (Belle) Wilhelmina Victoria



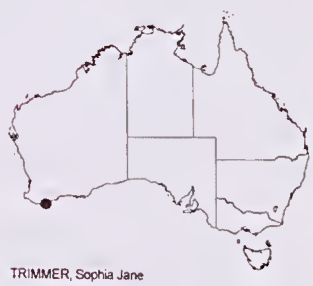
THORNTON, Edith



THOZET, Maria Isabella

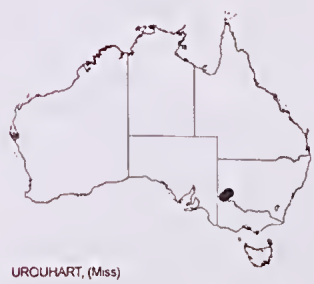


TOLL, Florence Kate

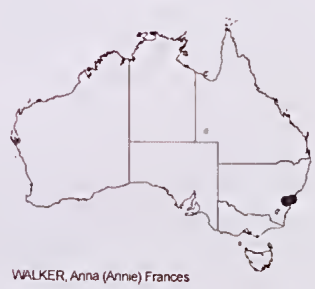


TRIMMER, Sophia Jane

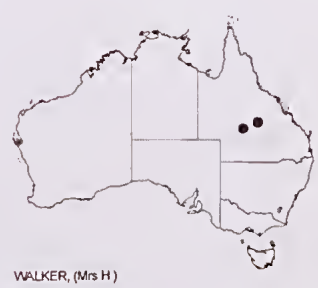
TURNER, (Miss)



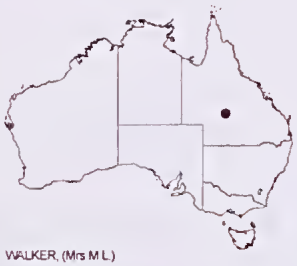
URQUHART, (Miss)



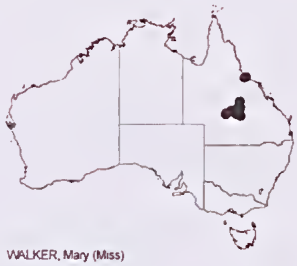
WALKER, Anna (Annie) Frances



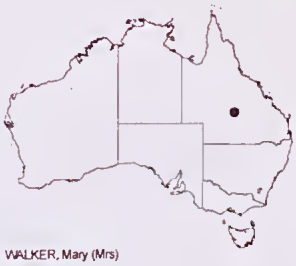
WALKER, (Mrs H )



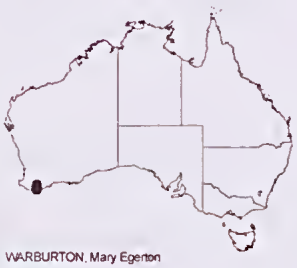
WALKER, (Mrs M L)



WALKER, Mary (Miss)

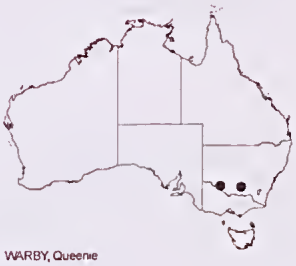


WALKER, Mary (Mrs)

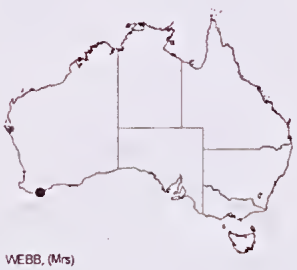


WARBURTON, Mary Egerton

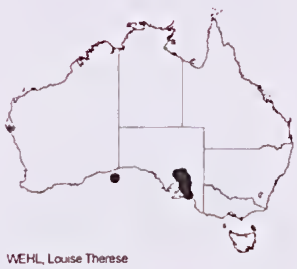
WARBURTON, Winifred Egerton



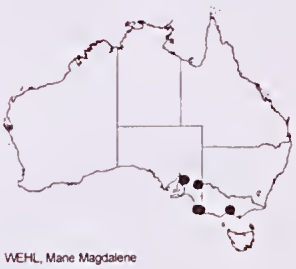
WARBY, Queenie



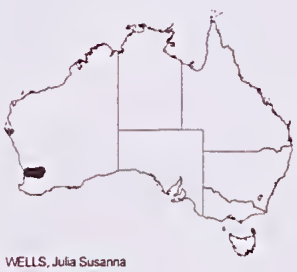
WEBB, (Mrs)



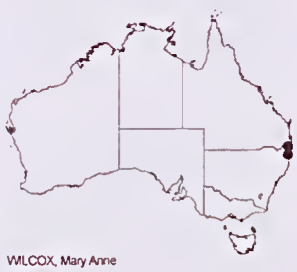
WEHL, Louise Therese



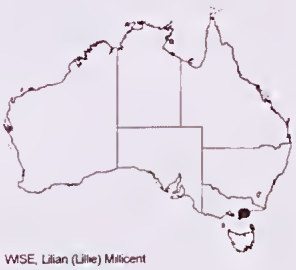
WEHL, Marie Magdalene



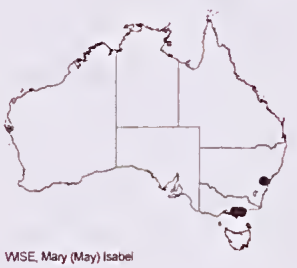
WELLS, Julia Susanna



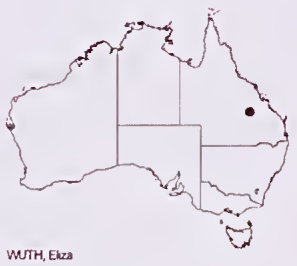
WILCOX, Mary Anne



WISE, Lilian (Lilie) Millicent



WISE, Mary (May) Isabel



WUTH, Eliza

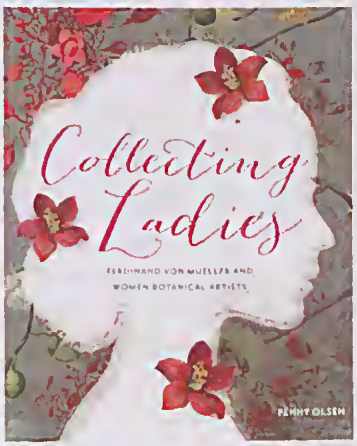
# Review of *Collecting ladies: Ferdinand von Mueller and women botanical artists*

Jill R. Thurlow

Royal Botanic Gardens Melbourne, South Yarra, Victoria 3141, Australia

***Collecting ladies: Ferdinand von Mueller and women botanical artists***

Penny Olsen
National Library of Australia, Canberra, 2013.
ISBN: 9780642277534, 237 pp., RRP: $39.99




Ferdinand von Mueller, the first Government Botanist of Victoria and the greatest Australian botanist of the 19th century, advertised for plant collectors, including ladies, in newspapers throughout Australia. A large number of women responded to the advertisements and collected for Mueller from around Australia. In *Collecting ladies*, author Penny Olsen profiles fourteen collectors who were also botanical artists. Some of the more well-known 'ladies', such as Louisa Anne Meredith, Fanny Anne Charsley, the Scott sisters Harriet and Helena, Fanny de Mole, Louisa Atkinson and Ellis Rowan, produced beautifully illustrated books and much has been written about them. The other women profiled are: Rosa Fiveash, Euphemia Henderson, Anna Frances Walker, Gertrude Lovegrove, Margaret Forrest, Flora Martin and Mueller's niece Marie Wehl.

Some women had a direct relationship with Mueller, through meeting him in person or via correspondence. Others, such as Fiveash and Lovegrove, while they overlapped in time, were connected with other botanists (John Ednie Brown and William Baeuerlen, respectively), but they are included because in the author's words they 'benefited from the milieu' created by Mueller.

The cover of this book is a delight to behold and hold. It shows a silhouette of the side profile of the face of a lady in white superimposed onto a portion of an Ellis Rowan painting of *Bombax malabaricum*, and promises the reader a rare look into women artists painting and collecting specimens of plants in the 1800s. Indeed, the whole book is beautifully laid out with numerous colour reproductions of original artwork held by the National Library of Australia and other institutions, many not previously reproduced.

The book opens with an account of Ferdinand von Mueller's botanical achievements followed by portrayals of the lives and achievements of the fourteen 'collecting ladies'. There are separate chapters for most of the women and a final chapter on two who particularly painted fungi (Wehl and Martin). Each chapter is profusely illustrated with their botanical art and other illustrations and photographs from the time, which draw the reader in to understand the personal side of each woman and their association with Mueller.

The 'collecting lady' who was perhaps closest to Mueller was Euphemia Henderson, a flower painter who painted in Melbourne's Botanic Gardens and brought flowers to Mueller to be identified. She was apparently his first love and they became engaged, but the engagement was short-lived and dissolved by Mueller sending a letter care of a Doctor friend, David John Thomas. Apparently Mueller's colleagues had insinuated that Henderson was 'past childbearing age'. Mueller however, continued to correspond with Henderson and she in turn always remembered him on his birthday. The Royal Botanic Gardens Melbourne is fortunate that Euphemia Henderson's sketch book containing 36 loose flower paintings was donated to the Library by her family. Nine of the paintings have been beautifully reproduced for the first time in *Collecting ladies*.

*Collecting ladies* includes a detailed list of illustrations, with information on the medium, size and location of the original. A handy inclusion to this list are thumbnails of the images, where they are reproduced in part in the main text. There is also a comprehensive bibliography; but, frustratingly, the items are not linked to the main text, and therefore it is difficult to match up quotes with particular letters. The index is useful for the text, but unfortunately does not include names of plants that are depicted in the paintings reproduced in the book.

*Collecting ladies* is primarily a work of social history, and there is not much assessment of the scientific value of the artwork, nor of the technical aspects of flower painting or the various methods of reproduction. However, Penny Olsen has crafted a wonderful account of a notable part of Australia's botanical history. Through the detail of their lives, the women are shown to be strong collaborators, not shadowy handmaidens to Mueller.

## MUELLERIA INSTRUCTIONS FOR CONTRIBUTORS

**Submission.** The Editor, *Muelleria*
Royal Botanic Gardens Melbourne
Private Bag 2000, South Yarra, VIC, 3141
muelleria@rbg.vic.gov.au

Papers may be submitted at any time.

Submit all material, including illustrations and tables, on CD or by email. Each figure and table should be supplied as a separate file. Vouchers for new species or for molecular or ecological research must be lodged at the time of submission. All papers are peer reviewed and should not be under consideration elsewhere. No page charges apply for black-and-white pages. Colour plates will only be considered after discussion with the Editor, and may incur a charge.

**Please read the instructions for authors at www.rbg.vic.gov.au/science/publications/muelleria.**

**Formatting.** Manuscripts should be left-aligned with 1.5 line-spacing throughout, and left and right margins of 2 cm. Body text should be 10 pt Times New Roman. All text should be in the font in which it will be published, i.e. **bold** or *italics*.

**Title.** The title should be concise and informative, and formatted in 12 pt, centred, bold type. Use minimal capitalisation.

**Author(s).** Authors' names, affiliations and addresses (including post code, state and country) should follow the title. Addresses and affiliations should appear below the authors' names, keyed by superscripted numbers. Include the e-mail address of the corresponding author.

**Abstract.** Precede the main text by an abstract not exceeding 120 words, covering the scope of the work and findings. All new names and combinations made in the paper must be explicitly given in the abstract. Taxon names at genus rank or below must be accompanied by the nomenclatural authorities.

**Key words.** Provide 3–5 key words that are not used in the title.

**Main text.** The first paragraph of any section should be flush left. Subsequent paragraphs are to be indented, and not separated by a blank line. Three main headings should be used:

**Heading level 1**

HEADING LEVEL 2

***Heading level 3*:** indented one tab space and followed by text on the same line.

Footnotes should not be used. *References* should be cited in text as, e.g. Walsh (1992), Brown and Murphy (2004); for three or more authors use *et al.* Within parentheses, cite multiple references in order of publication and use an ampersand (&) between authors' names: (Kuntze 1891; Lawrence *et al.* 1968; Allan 1979, 2000; Jarman 1990; Lewis & Entwisle 1995a, 1995b). Measurements should be in SI units. Use an en rule (–), not a hyphen, between spans of numbers, and use a multiplication sign (×), not the letter 'x', where appropriate. Scientific names at generic rank and below must be accompanied by the nomenclatural authorities when first introduced in the main text and also in the abstract. *Nomenclatural citations* must follow the rules and recommendations of the most recent *International Code of Nomenclature for Algae, Fungi and Plants*. Book titles must be abbreviated following *Taxonomic Literature II* (Stafleu & Cowan 1976–1986), and journal citations in the synonymy must follow *Botanico-Periodicum-Huntianum* (Lawrence *et al.* 1968). Authors' names must follow *Authors of Plant Names* (Brummitt & Powell 1992) and should have minimal spacing. Designations of herbaria should follow *Index Herbariorum* (Holmgren *et al.* 1990). Homotypic synonyms are to be included in one paragraph, listed in chronological order. Heterotypic synonyms should follow chronologically in separate paragraphs. Misapplied names should follow the heterotypic synonyms.

**Figures, tables and appendices.** Do not embed images in the text. Illustrations (including photographs, line art, graphs and maps) should be in TIFF or JPEG format, and must be at least 300 dpi at final size. Figures and tables may be single (7 cm) or double (14 cm) column width, full page length (18 cm), or in landscape format (18 x 14 cm). Illustrations require either a scale bar, or an indication of the magnification in the caption. Figure, table and appendix captions should be listed after the references.

**References.** Only publications cited in the text should appear in the Reference list. Include journal names in full. Floras in a series should be cited in book format.


Allan, H.H. (1961). *Flora of New Zealand.* R.E. Owen, Government Printer: Wellington.

Ahti, T. and Kashiwadani, H. (1984). 'The lichen genera *Cladia*, *Clodina* and *Clodonia* in southern Chile'. In H. Inoue (ed.), *Studies on the Cryptogams of Southern Chile*, pp. 125–149. Kenseisha Ltd: Tokyo.

Brummitt, R.K. and Powell, C.E. (1992). *Authors of plant names.* Royal Botanic Gardens: Kew.

Jarman, S.J. (1975). *Experimental taxonomy on the family Epacridaceae.* PhD thesis, The University of Tasmania, Hobart: Tasmania.

Pickett, J.W., Smith, N., Bishop, P.M., Hill, R.S., Macphail, M.K. and Holmes, W.B.K. (1990). A stratigraphic evaluation of Ettingshausen's New England Tertiary plant localities. *Australian Journal of Earth Sciences* **37**, 293–303.

Swofford, D.L. (2000). *PAUP. Phylogenetic Analysis Using Parsimony (version 3.1.1.)* Illinois Natural History Survey: Champaign, USA.

Walsh, N.G. (1994). 'Poaceae'. In N.G. Walsh and T.J. Entwisle (eds), *Flora of Victoria*, **Vol. 2**, pp. 356-627. Inkata Press: Melbourne.

# Muelleria

Royal Botanic Gardens Melbourne
Birdwood Avenue, South Yarra
Victoria, Australia

www.rbg.vic.gov.au

ISSN 0077-1813


# Contents

Volume 32, 2014

## Contributed papers


Page

A new herbaceous species of *Pluchea* (Asteraceae: Plucheinae) from central Australia ..... 3
– D.E. Albrecht and A.R. Bean

Studies of the distribution and taxonomy of *Xanthorrhoea glauca* subsp. *angustifolia* (Xanthorrhoeaceae) in Victoria ..... 8
– M.P. Bellette

A revision of the *Coronidium scorpioides* (Asteraceae: Gnaphalieae) complex ..... 16
– N. Walsh

Notes on *Olearia* (Asteraceae: Astereae) in south-east Australia: *O. tenuifolia, O. adenophora* and description of a new species endemic to eastern Victoria ..... 34
– N. Walsh

The weed that was not: *Picris hieracioides* (Asteraceae) in Australia ..... 39
– L. Gillbank

*Rubus costifolius* and *R. bergii* in the National Herbarium of Victoria ..... 52
– A. van de Beek

Hidden treasures: Brazilian plants collected by Prince Maximilian zu Wied held in the National Herbarium of Victoria (MEL) ..... 58
– C.L. Gallagher and P.L.R. de Moraes

'A taste for botanic science': Ferdinand Mueller's female collectors and the history of Australian botany ..... 72
– S. Maroske

Ferdinand Mueller's female plant collectors: a biographical register ..... 92
– S. Maroske and A. Vaughan


## Book review


Review of *Collecting ladies: Ferdinand von Mueller and women botanical artists* ..... 173
– J.R. Thurlow